

Cedar City

Transportation Master Plan



(Revised) DRAFT REPORT
August 19, 2004

Prepared By
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Cedar City

Transportation Master Plan

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1. Introduction

1.1. Background

Cedar City is the largest community in Iron County and is located at the mouth of Coal Creek in south-central Utah. Its elevation is 5,800 feet above sea level, and it lies in a semi-arid part of the state with 10,000-foot mountains to the east and a vast desert area to the west.

Settlement began on 11 November 1851 with the arrival of a group of thirty-five men from Parowan, twenty miles northward, to establish an iron works. They were organized and traveled in two militia companies--a foot company and a cavalry company--under the direction of Major Matthew Carruthers and Captains Henry Lunt and Peter M. Fife. Captain Lunt was acting commander, as Major Carruthers was temporarily detained in Parowan. The actual settlement site on the north bank of Coal Creek had been selected a week earlier by George A. Smith and a committee consisting of Matthew Carruthers, Henry Lunt, William C. Mitchell, John L. Smith, and Elisha H. Groves.

Small cottonwood log houses were built fort-style at the western base of the hill, the crest of which now supports the microwave television and other electronic communications equipment serving the Cedar City area. The settlement was given the name of Fort Cedar because of the abundance of trees, which were called "cedar" trees, although technically they are junipers.

The boxes from the wagons were removed and used for temporary shelters while small log homes were constructed from the trunks and large limbs of cottonwood trees as well as float material found along the creek bottoms several miles to the west. As the log houses were completed, families were brought from Parowan. In the meantime, the wagon boxes served as a temporary fort. Later, a site for the fort was selected nearer the proposed blast furnace, at the present city park, which was to have been a "company town" but was not developed.

When Indian difficulties threatened, the location of the fort was questioned as the nearby hill gave the Indians a decided tactical advantage. Also, as more and more ironworkers arrived, the fort became too small. A new and larger site was selected on the south bank of the stream adjoining the old site to the southwest. This was partially occupied in the early months of 1853 by those who wanted to move and by new arrivals. With the outbreak of hostilities with the Indians in July 1853 (the Walker Indian War), a forced evacuation of the entire fort was made in two days to the new site.

The northeast part of the new area, which was a half-mile square, was enclosed within a wall, leaving some of the lots on the west and south outside the wall. It was completed in January 1854. Interstate Highway 15 now bisects this old town site.

Two years later (June 1855), another site, closer to the blast furnace and out of the flood plain of Coal Creek, was surveyed and occupied at the suggestion of Brigham Young. This is the present site of Cedar City.

Beginning with the demise of the iron works in 1858, the town's economy became agrarian in nature although iron mining continued strongly through World War II and into the 1980s.

The coming of the railroad to Cedar City in 1923 exposed Utah's national parks to the world of tourism, and Cedar City was promoted as the "Gateway to the Parks." The railroad also provided an outlet for the products of the iron mines. Presently the city's economy is based on tourism, agriculture, some mining activities, some industrial and space age complexes, and Southern Utah State University with an enrollment of (6,000) students. The college was founded in 1897 as a branch of the State Normal School (University of Utah). In 1913 it became a branch of the Utah State Agricultural College of Logan. In 1968 the state legislature transformed it into a four-year college of liberal arts and sciences with elementary and secondary teacher education programs. On 1 January 1991 it attained university status.

Southern Utah University is the home of the Utah Shakespearean Festival, which provides an important economic and cultural infusion to the area. Cedar City has thus also become known as the "Festival City." The professional quality of the plays produced each summer, employing talented professionals from all over the United States, is becoming known around the world.

This information was provided from <http://onlinutah.com> in an article written by Morris A. Shirts.

1.2. Study Need

Cedar City has seen a 52.7% population increase over the last decade. New industrial and residential developments have increased steadily over the same time frame. These events continue to stimulate future growth in this area. A well-established transportation plan is needed to provide direction for continual maintenance and improvements to Cedar City's transportation system.

1.3. Study Purpose

Cedar City has an adopted General Plan that describes the transportation needs of this area. With the aging infrastructure of Cedar's transportation system and the need for system improvements, a more extensive transportation plan is necessary for Cedar City and the surrounding area. This TMP should be adopted by Cedar City as a companion document to the city's General Plan. With the transportation master plan in place the city can qualify for grants from the State Quality Growth Commission.

Some of the major transportation issues around the State are as follows:

- Safety
- Railroad crossings
- Trails (bicycle, pedestrian, & OHV)
- Signals
- City interchange aesthetics
- Connectivity of roadways
- Property access
- Truck traffic
- Alternate routes
- Speed limits

Cedar City recognizes the importance of building and maintaining safe roadways, not only for the auto traffic but also for pedestrians and bicyclists.

The primary objective of the study is to establish a solid transportation master plan to guide future developments and roadway expenditures. The plan includes two major components:

- Short-range action plan
- Long-range transportation plan

Short-range improvements focus on specific projects to improve deficiencies in the existing transportation system. The long-range plan will identify those projects that require significant advance planning and funding to implement and are needed to accommodate future traffic demand within the study area.

1.4. Study Area

The study area includes Cedar City, and land adjacent to it that is in Iron County. A general location map is shown in Figure 1. A more detailed map of the study area and city limits is shown in Figure 2. The study area was developed by Cedar City and approved by the Cedar City Transportation Master Plan Technical Advisory Committee.

The roadway network within the study area includes I-15, SR-56, SR-130 and SR-14. Each of these roads provides a vital function to Cedar City, to the rest of Iron County, and to the State. I-15 connects to all points north and south including Salt Lake City and Las Vegas. It also connects to I-70. I-15 is a region commuter and trucking route. SR-56 connects to areas west of Cedar City and is an important trucking route. SR-130 is the Main Street in Cedar City and serves local business and community circulation needs. SR-14 is the canyon access to the east and provides access to Cedar Mountain and connections to communities to the east. These roadways along with the local road network are shown in Figure 2.

1.5. Study Process

The study, which began in June 2004, is proceeding as a cooperative effort between Cedar City, UDOT, and local community members. It is being conducted under the guidance of Cedar City Officials. The following individuals participated in the initial meetings to provide input used to create this document. This group listed below will be referred to as the Technical Advisory Committee or “TAC” for this document.



Iron County Engineer
Iron County Commission
Cedar City Planning Commission

Steve Platt
Gene Roundy
Harold Hiskey

Cedar City Manager	Jim Allan
Administrative Service Director.	Rick Holman
Cedar City Engineer	Kit Wareham
Director of Chamber of Commerce	Mark Alley
Parks and Recreation Director	Bob Tate
Transportation Supervisor Schools	Danny Cowan
Safety/Risk Manager SUU	Brent Johnson
Dir/ Plant Manager U of U Med Center	Craig Bentley
US Forest Service Transportation Planner	Noelle Meier
Planner	Reed Erickson
Planner	Pete Wilkins
Cedar Livestock	Sandy Webster
Circle 4 Farms	Carl Maples
Co-Manager of Wal-Mart	Greg Tucker
Developer	Frank Nichols
Iron County Home Builders Assoc.	June Sewing
CEO / WMC	Steve Smoot

The study process for the Cedar City Transportation Master Plan consisted of three basic parts: (1) inventory and analysis of existing conditions, (2) projected future conditions, and (3) development of the transportation master plan. This process involved the participation of the TAC for guidance, review, evaluation and recommendations in developing the TMP to include development of future projects for the identified study area.

The TAC will evaluate each part of the study process. Their comments will be incorporated into the study's draft final report. The remainder of the draft final report will focus on the recommendation and implementation portion of the transportation plan program. Transportation projects that will be recommended for the short-term and long-range needs will be developed based on the TAC's recommendations and concurrence.

The study process allows for the solicitation of input from the public at two TAC workshops. This public participation element is included in the study process to ensure that any decisions made regarding this study are acceptable to the community.

The first TAC workshop provided an inventory and analysis of existing conditions and identified needed transportation improvements. The second TAC workshop focused on prioritizing projects, estimating costs, and discussed funding process.

The TAC is expected to recommend those comments that are to be incorporated into the report and applicable to the goals of this study. A draft report will be submitted to the City for review and comments.

Upon City approval of the draft report, the UDOT will prepare the final report and submit it to the City for adoption. The final report will describe the study process, findings and conclusions, and will document the recommended transportation system projects and improvements.

Figure 1: Cedar City Study Area Location

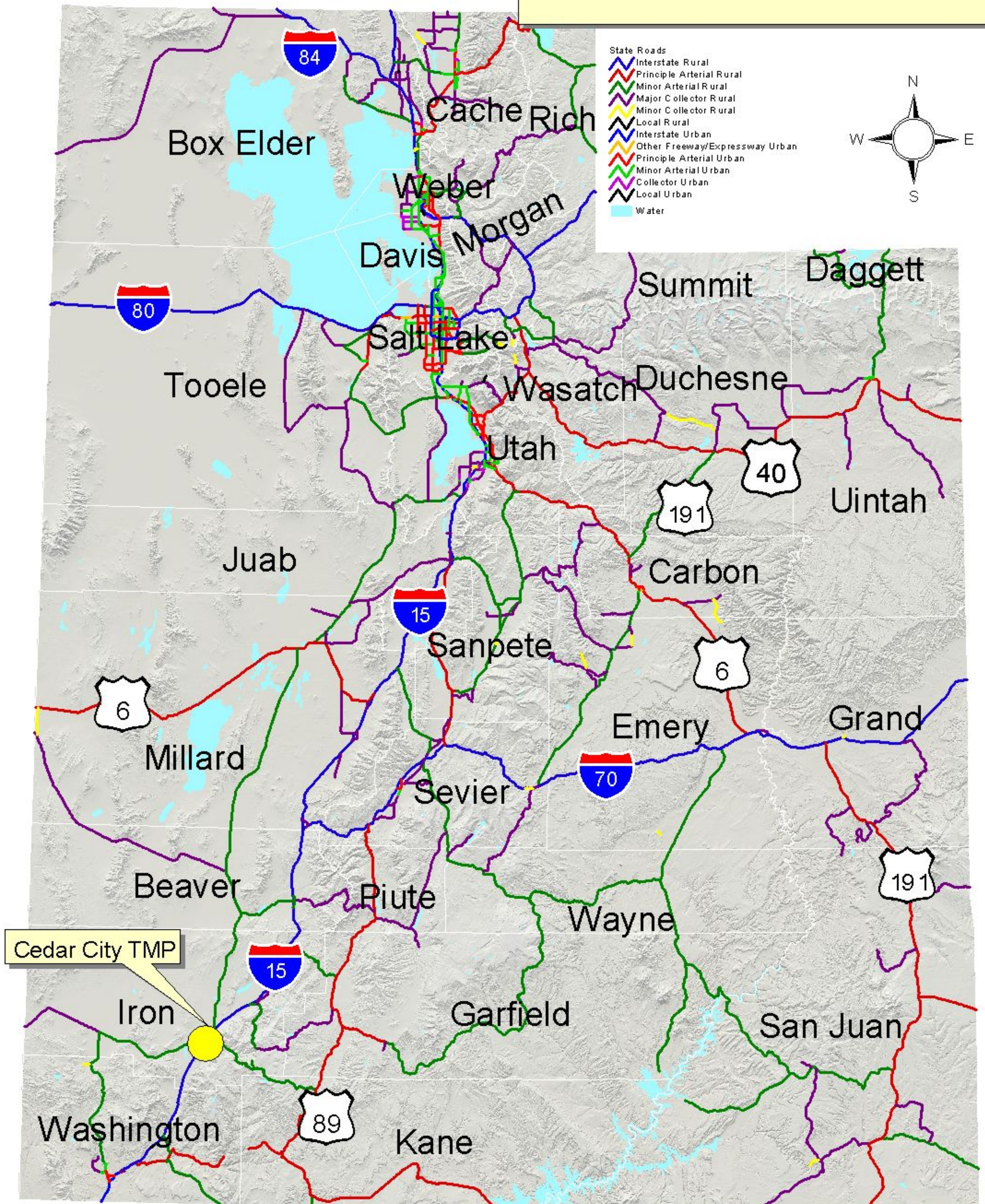
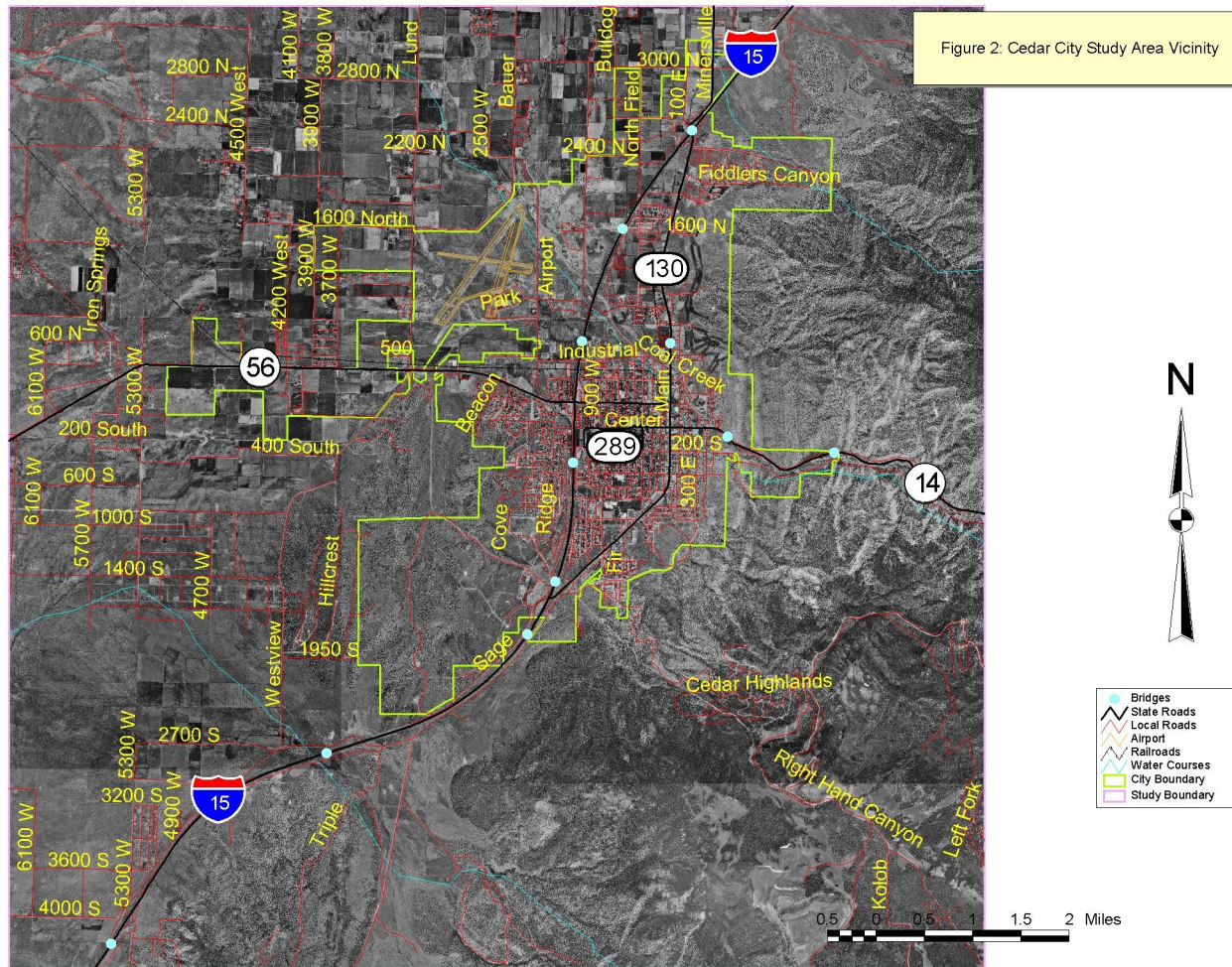


Figure 2: Cedar City Study Area Vicinity



2. Existing Conditions

An inventory and evaluation of existing conditions within the study area was conducted to identify existing transportation problems or issues. The results of the investigation follow.

2.1. Land Use

In order to analyze and forecast traffic volumes, it is essential to understand the land use patterns within the study area. Chapter 2 of Cedar City General Plan outlines land use classifications and annexation plans. Much of the City is zoned Residential, but there are also many issues dealing with commercial and industrial properties. The SUU campus and student housing areas will also create special transportation issues. By analyzing the patterns or changes in land use, we can better predict the ever-changing transportation needs.

The Cedar City Zoning map follows on the next page.

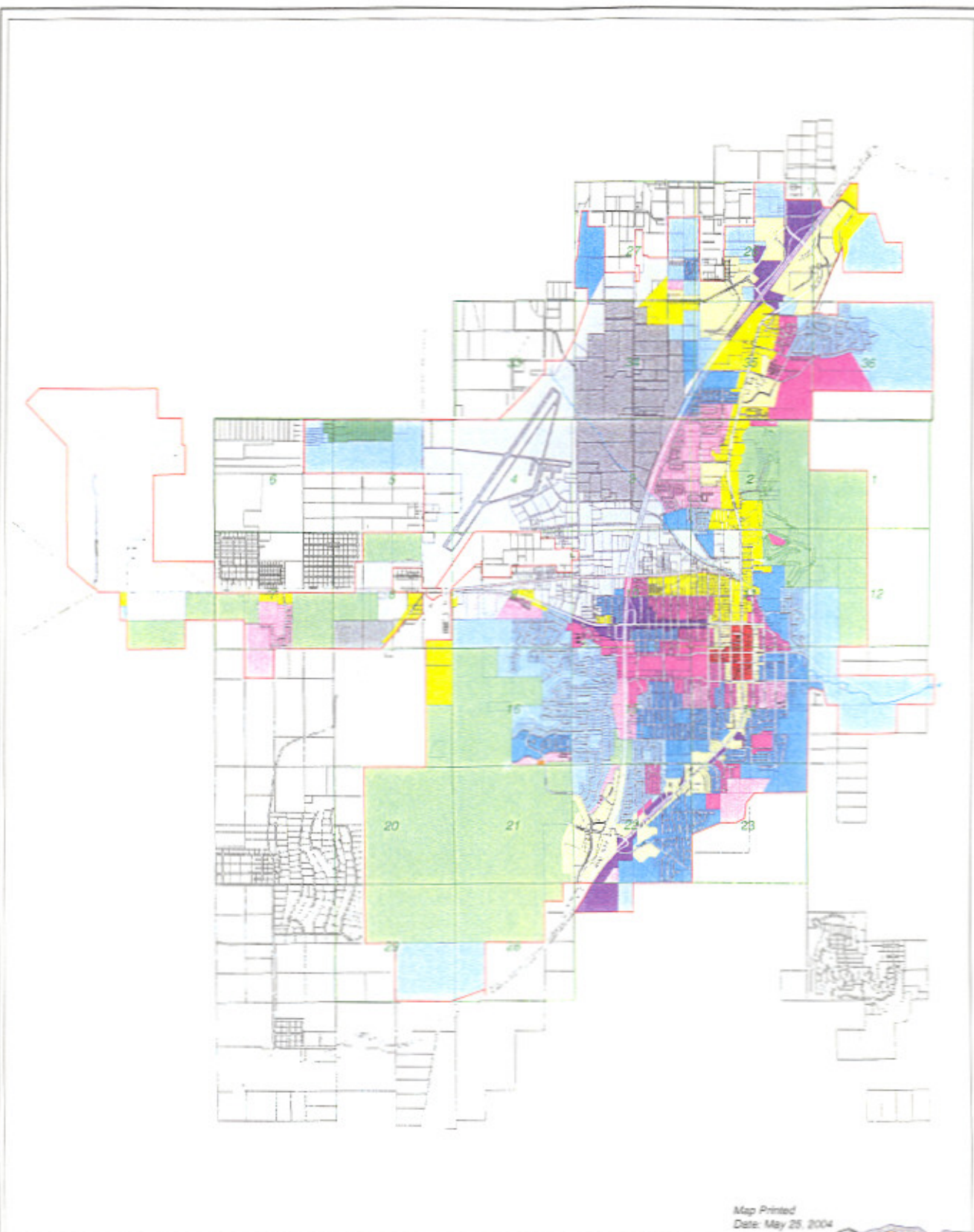
2.2. Environmental

In Utah there are a variety of local environmental issues. Each of the cities and counties must look at the environmental issues in their areas on a case-by-case basis. There are many resources that can help local entities to determine what issues should be addressed and how any problems that may exist can be resolved.

Some of the environmental concerns around the State are wetlands, endangered species, archeological sites, and geological sites among other issues. Environmental concerns should be addressed when looking at an area for any type of improvement to the transportation system. Specific issues mentioned in the Cedar City General Plan are hillside erosion, wetlands, and air quality. Protecting the environment is a critical part of the transportation planning process.

2.3. Socio-Economic (Census Brief: Cities and Counties of Utah, May 2001)

Cedar City ranks 24th for population in the State of Utah, out of 235 incorporated cities and towns listed. Historical growth rates have been identified for this study, because past growth is usually a good indicator of what might occur in the future. Figure 4 identifies the population growth over the past 50 years for the State of Utah, Iron County and Cedar City. Figure 5 identifies that population change in Cedar City has ranged from 18% to 53% per decade for the same 50-year period of time, while growth in the State has gained between 18 and 38 % per decade during the past 50 years.



Map Printed
Date: May 25, 2004

CEDAR CITY, UTAH

Zoning Map

Disclaimer
Cedar City Corporation assumes no liability for the accuracy of this map. Intend as for viewing purposes only.

ZONES

Central Commercial (CC)
General Commercial (GC)
Highway Service (HS)
Industrial & Manufacturing -1 (IM-1)
Industrial & Manufacturing -2 (IM-2)

Neighborhood Commercial (NC)
Residential -1 (R-1)
Residential -2 (R-2)
Residential -3-16 (R-3-16)

Residential -3-36 (R-3-36)
Residential / Agricultural (RA)
Residential Estates (RE)
Downtown Commercial (DC)

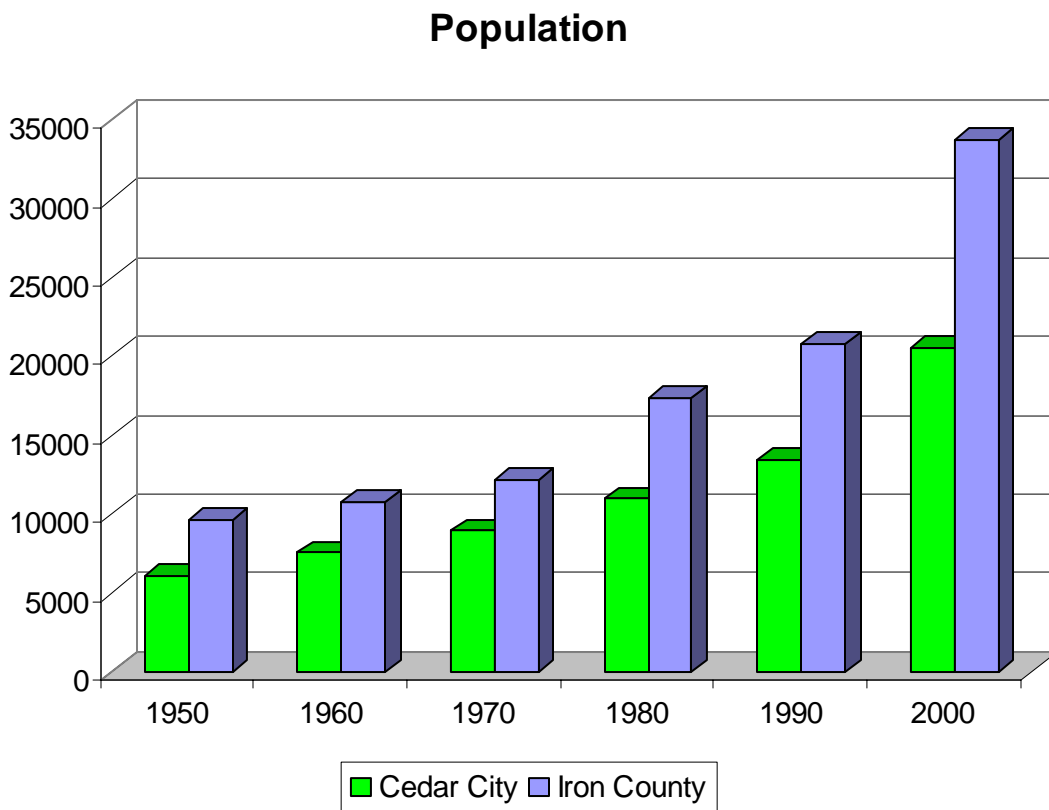
Parcel
Creek
Railroad
Township/Range Line
Section Line
Paved Road



P.O. Box 249 10 North Main
Cedar City, Utah 84721

Figure 4. Population Data

Year	Population		
	Utah	Iron County	Cedar City
1950	688,862	9,642	6,106
1960	890,627	10,795	7,543
1970	1,059,273	12,177	8,946
1980	1,461,037	17,349	10,972
1990	1,722,850	20,789	13,443
2000	2,233,169	33,779	20,527



Source: U.S. Bureau of the Census

<http://www.governor.utah.gov/dea/OtherPublications.html>

Figure 6 identifies yearly population growth rates for the State of Utah and Iron County.

The State of Utah's population has grown every decade from 1950 until 2000; Iron County has also had positive growth in population from 1950 to 2000.

Cedar City has some unique demographic characteristics when compared with the State, particularly with age demographics. In the 25 to 54-age category, the State is at 38.6% the County is at 33.3% and the City is at 31.1%. For the 65+-age category, the State is at 8.5%, the County is at 8.6% and the City is at almost 7.8%. The State's median age is 27.1 years and the County's median age is 24.2 years, City's median age is 23.3 years. Another interesting statistic is that of Veteran status with State at 10.7%, County at 10.0%, and Cedar City at 8.1%.

The 2000 median household income in Cedar City is \$32,403, compared to the State median household income of \$45,726.

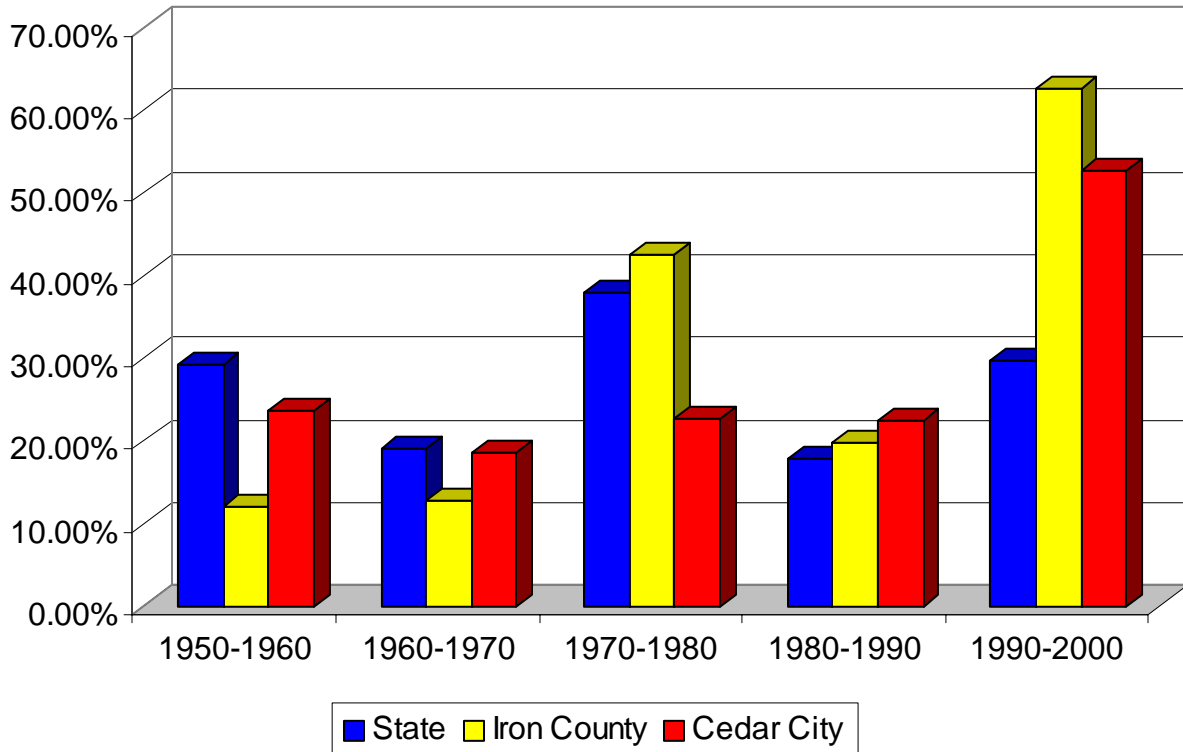
The unemployment rate in Cedar City was 3.8 percent in 2000. Cedar City has had similar fluctuations to the State. According to the Utah Department of Employment Security (UDES), in 2000 there were approximately 10,113 employed people in Cedar City or 65.2% of the population. The city has 587 unemployed people, which is 3.8% of the population. There are 15,484 employed people in Iron County or 63.7% percent of the population. Cedar City being a college town has a greater number of unemployed people as the enrollment for Southern Utah University is currently around 6,000. The county has 863 people unemployed, which is 3.5% of the population.

The majority of employees in Iron County work in three primary employment sectors: Services, Government & Trade as shown in Figure 8. In the county, these sectors make up 58.37% of the labor force. Another interesting note was that housing built from 1990-2000 were 39.7% of total for Cedar City compared to 25% for the state. Also homes built before 1939 were 7.6% of the total for Cedar City with 10% for the state.

Figure 5. Population Change Data

Decade	State of Utah	Iron County	Cedar City
1950-1960	29.29%	11.96%	23.53%
1960-1970	18.94%	12.80%	18.60%
1970-1980	37.93%	42.47%	22.65%
1980-1990	17.92%	19.83%	22.52%
1990-2000	29.62%	62.48%	52.70%

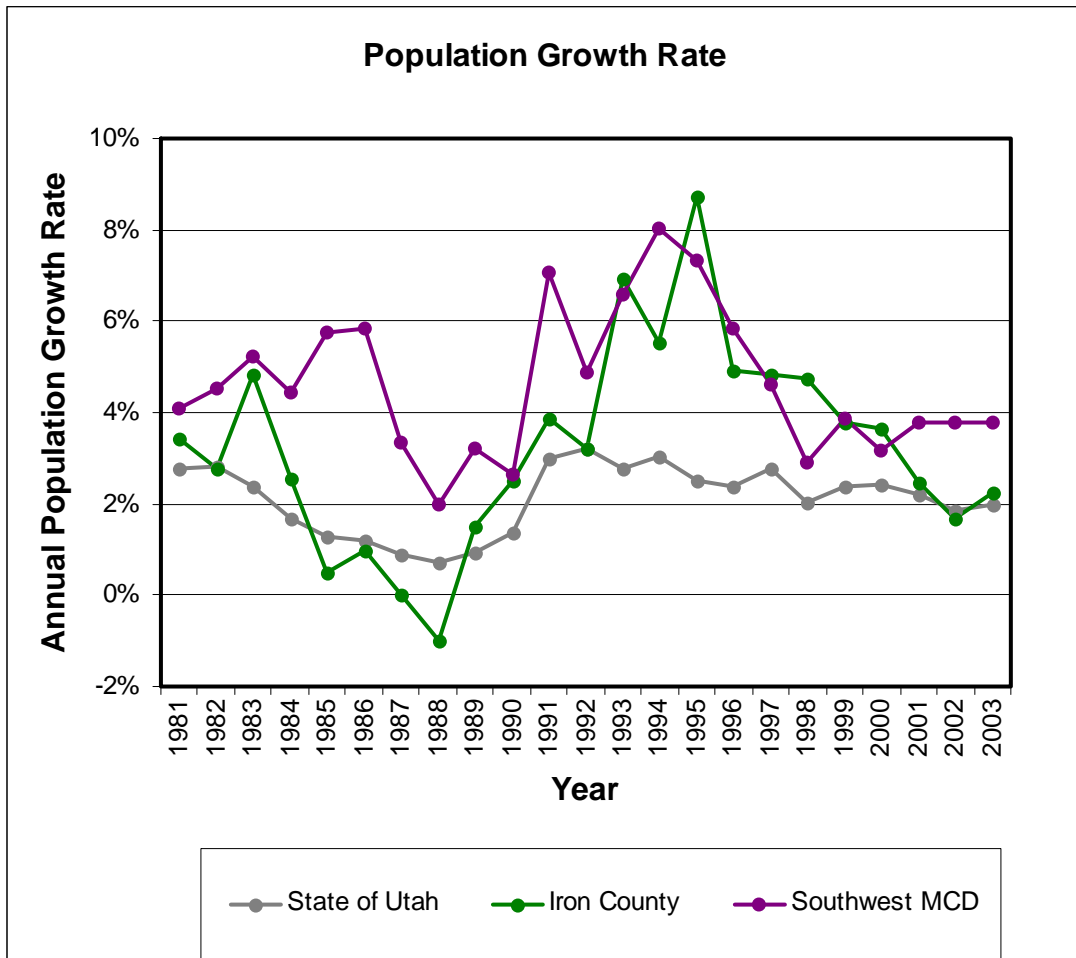
Decenial Population Change



Source Data: U.S. Bureau of the Census

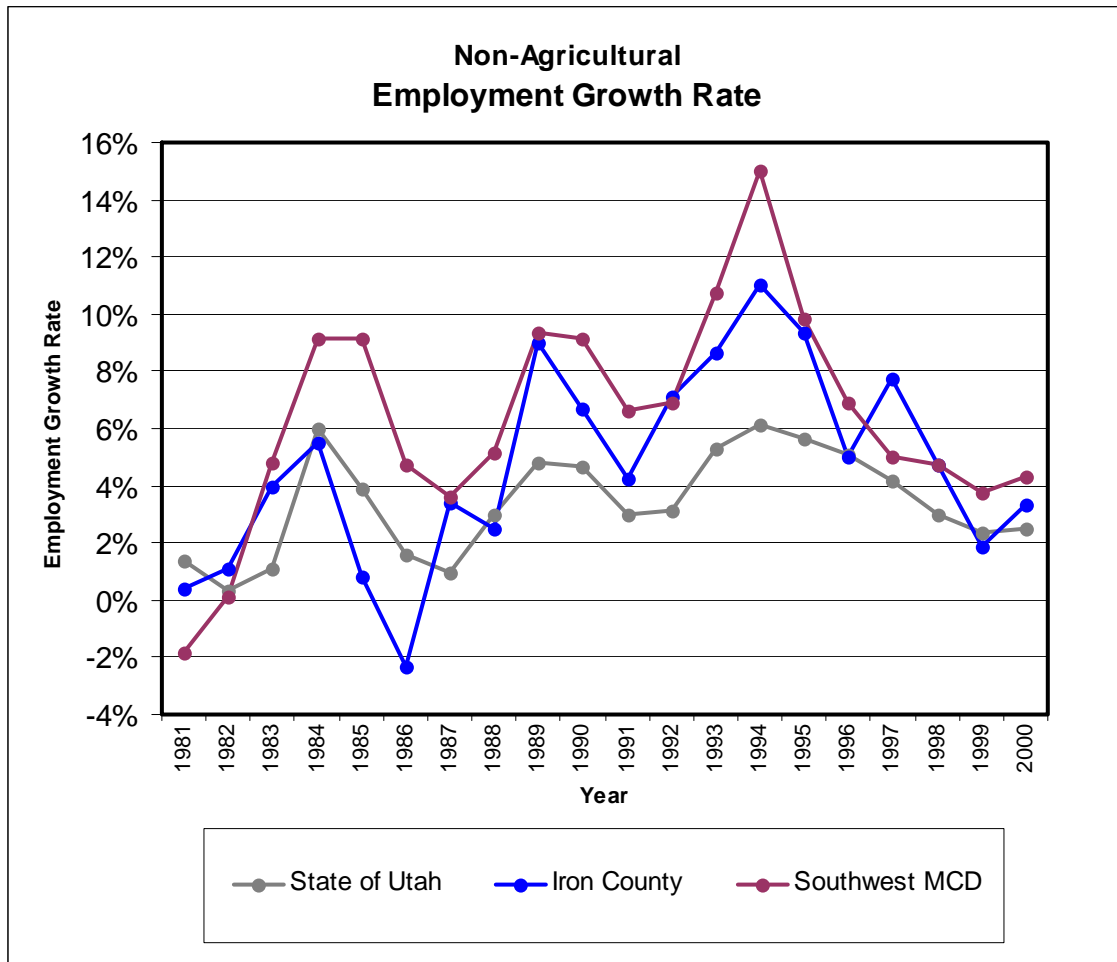
<http://www.governor.utah./dea/OtherPublications.html>

Figure 6. Population Growth Rate (1980-2000)



Source: Governors Office of Planning and Budget
<http://www.governor.utah.gov/dea>

Figure 7. Employment Growth Rate (1980-2000)



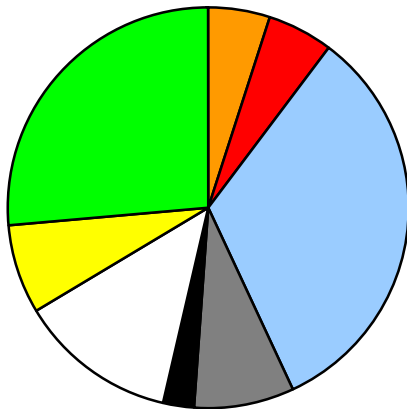
Source: Governors Office of Planning and Budget
<http://www.governor.utah.gov/dea>

Figure 8. Employment Sectors (1980-2000)

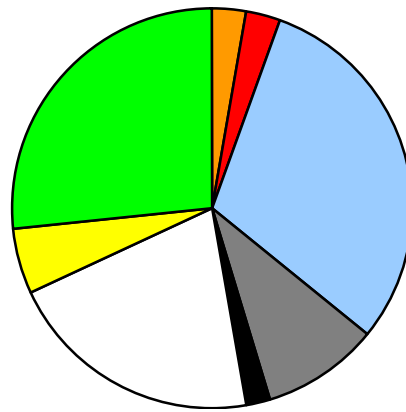
Sector	1980	1990	2000	Δ% 1980-2000
Construction	3.94%	2.16%	4.95%	213.79%
FIRE	4.02%	2.10%	2.47%	53.38%
Government	25.65%	23.51%	20.44%	99.26%
Manufacturing	6.13%	7.26%	9.32%	280.04%
Mining	2.15%	1.57%	0.31%	-63.92%
Services	9.91%	16.12%	20.59%	419.75%
TCPU	5.57%	4.14%	1.95%	-12.44%
Trade	20.57%	20.73%	17.34%	110.84%

FIRE= Finance, Insurance & Real Estate
TCPU = Telecommunication & Public Utilities

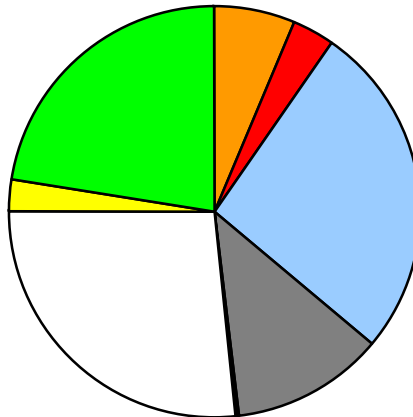
1980 Employment Sectors



1990 Employment Sectors



2000 Employment Sectors



Source: Governors Office of Planning and Budget
<http://www.governor.utah.gov/dea/HistoricalData.html>

2.4. Functional Street Classification

This document identifies the current function and operational characteristics of the selected roadway network of Cedar City. Functional street classification is a subjective means to identify how a roadway functions and operates when a combination of the roadway's characteristics are evaluated. These characteristics include; roadway configuration, right-of-way, traffic volume, carrying capacity, property access, speed limit, roadway spacing, and length of trips using the roadway.

The primary classifications used in classifying selected roadways of Cedar City are: Interstate, Principle Arterial, Minor Arterial, Major Collector, Minor Collector and Local. An Arterial's function is to provide traffic mobility at higher speeds with limited property access. Traffic from the local roads is gathered by the Collector system, which provides a balance between mobility and property access trips. Local streets and roads serve property access based trips and these trips are generally shorter in length.



The Cedar City area is accessed by I-15 and SR-130 from north and south SR 56 to the West and SR-14 to the east connecting the Dixie National Forest and Cedar Breaks National Monument. The functionally classified system is currently being revised statewide. The current functionally classified system generally defines the higher traffic roads, so only minor additions or changes will be required.

Figure 9: Existing State and Federal Aid Route Functional Classification

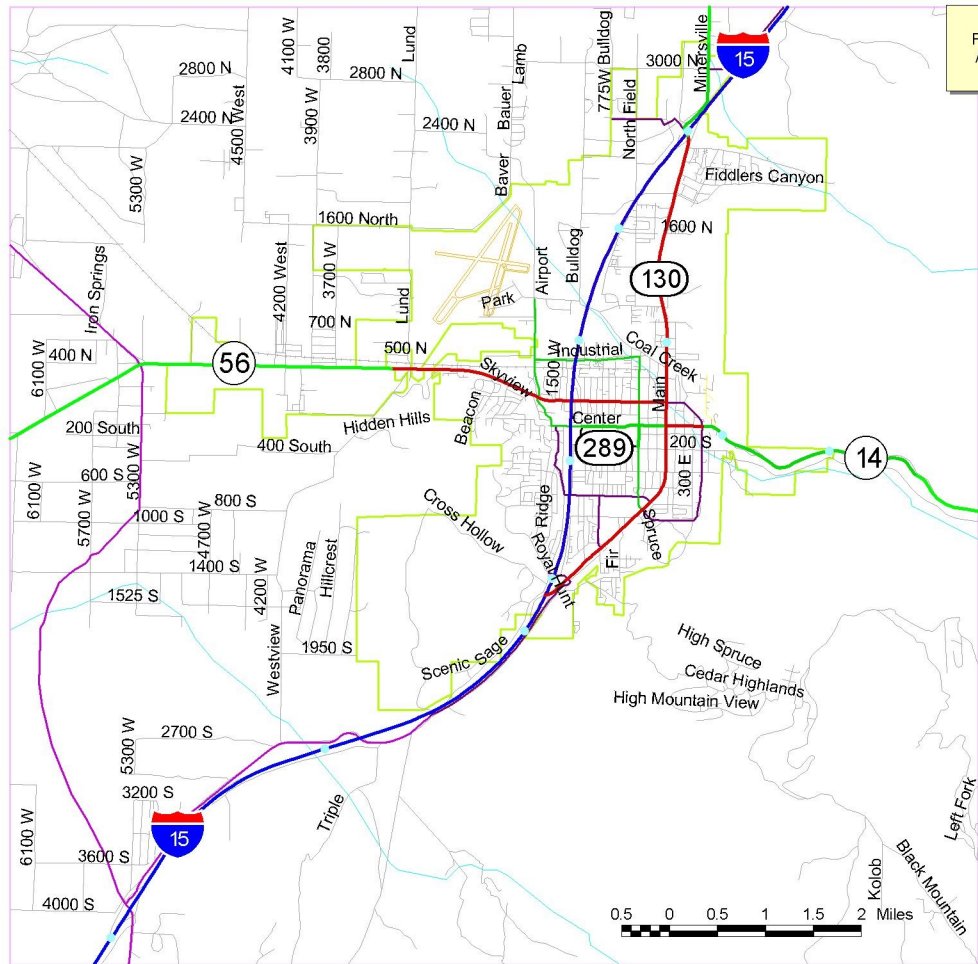
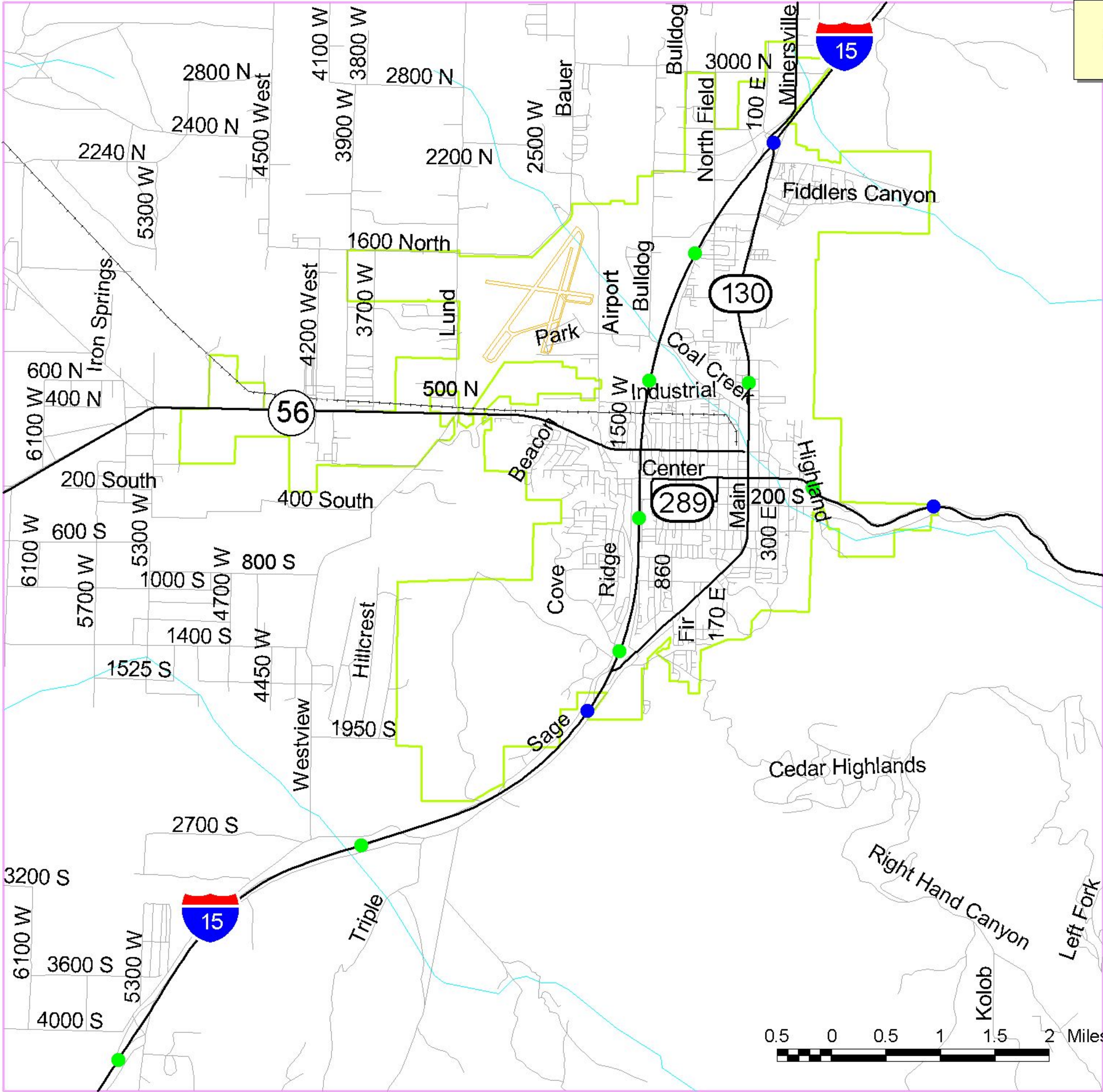


Figure 10: Bridge Sufficiency Ratings



2.5 Bridges

There are 11 bridges on the state system, and 3 bridges that are city bridges which is inspected by UDOT forces, located in the study area that could be eligible for federal bridge maintenance, rehabilitation, or replacement funds. Bridges are maintained and minor repairs made with maintenance funds. A bridge is rehabilitated or replaced as it deteriorates over time and as traffic volumes increase.

Table 1 compares the bridges in the study area and identifies their sufficiency rating and location. Sufficiency rating indicates current condition of the structure with a rating of 100 showing a structure that is in excellent shape. A rating nearing 50 will reveal a structure that is in need of attention and is eligible for federal funding.

Table 1. Bridges

Number	Location	Maximum Span	No. Lanes & Road Width	Sidewalk	Sufficiency Rating
OF-542	SR-14, MP 0.621	23.8 M	4 lane/ 24.8 M	Yes	79.9
OC 275	SR-14, MP 1.864	15.8 M	2 lane/ 10.1 M	No	72.9
1D-753	I-15, MP 50.954	33.5 M	2 lane/ 12.2 M	No	93.0
OC-501	I-15, MP 54.061	69.2 M	2 lane/ 10.4 M	Yes	96.0
3C-502	SR-130, MP 0.150	82.3 M	2 lane/ 7.9 M	No	75.9
1F-117(NBL)	I-15, MP 29.270	54.6 M	3 lane/ 15.6 M	No	78.5
3F-117(SBL)	I-15, MP 29.270	54.6 M	2 lane/ 12.3 M	No	96.6
1F-181	I-15, MP 57.168	26.5 M	2 lane/ 12.2 M	No	93.0
3 F-181	I-15, MP 57.100	26.5 M	2 lane/ 12.2 M	No	94.7
OC-182	SR-130 MP 9.576	73.4 M	4 lane/ 26.6 M	No	94.7
OC-565	I-15, MP 58.410	72.8 M	2 lane/ 12.6 M	Yes	85.4
OD-761	I-15, MP 59.653	64.3 M	2 lane/ 9.1 M	Yes	80.0
1D-788(NBL)	I-15, MP 60.896	25.3 M	2 lane/ 12.6 M	No	92.6
3D-788(SBL)	I-15,MP 60.896	25.3 M	2 lane/ 12.6 M	No	92.6
1D-762	I-15, MP 62.139	41.8 M	2 lane/ 12.2 M	No	79.0
3D-762	I-15, MP 62.139	41.8 M	2 lane/ 12.2M	No	91.0
OD-546	SR-130, 3.107	24.1 M	4 lane/ 25.8	Yes	87.2
021001F	Coal Creek/City Street, West side of Cedar City	28.9 M	2 lane/ 10.0 M	No	90.7
021002F	Coal Creek/City Street, 1 Mile NW of Cedar City	33.4	2 lane/ 9.7 M	No	88.0
021017C	Coal Creek/200 East	40.7	2 lane/ 18.0 M	Yes	99.9

Source: Utah Department of Transportation/Structures Division

2.6 Traffic Counts

Recent average daily traffic count data were obtained from UDOT. Table 2 shows the traffic count data on the key roadways of the study area. The number of vehicles in both directions that pass over a given segment of roadway in a 24-hour period is referred to as the average annual daily traffic (AADT) for that segment.

Table 2. Average Annual Daily Traffic

Road	Segment	Year	AADT
SR-14	Junction SR-130 Main Street in Cedar City	2002	4,352
SR-14	East Incorporated Limits Cedar City	2002	2,225
SR-14	East Urban Boundary Cedar City	2002	1,559
I-15	Cedar City (SR-130 Main) & So.Urban Boundary	2002	20,540
I-15	Center Cedar Interchange (SR-56 200 North)	2002	21,423
I-15	North Incorporated Limits Cedar City	2002	21,423
SR-130	Junction I-15	2002	8,555
SR-130	South Incorporated Limits of Cedar City	2002	13,340
SR-130	400 South in Cedar City	2002	33,350
SR-130	Junction SR-14 in Cedar City	2002	30,520
SR-130	Junction SR-56 in Cedar City	2002	21,145
SR-130	North Cedar City Interchange	2002	8,840
SR-56	West Incorporated Limits of Cedar City	2002	5,185
SR-56	Junction I-15/SR-130 (Main St) Cedar City	2002	10,270

Source: Utah Department of Transportation

**INCL=Incorporated City Limits*

These are averages for the entire year. Cedar City experiences a significant increase in traffic during the summer months. UDOT maintains 86 continuously operated automatic traffic recorders (ATR) throughout the state highway system. ATRs collect data continuously throughout the year in order to determine monthly, weekly, daily, and hourly traffic patterns. One ATR is located in or near the study area on SR-14. The following points summarize the 2003 data from the ATR at this location.

Traffic on SR-14; 1.7 miles East of Main Street

- July was the highest volume month.
- January was the lowest volume month.
- The highest daily volumes occurred on Saturday.
- The lowest daily volumes occurred on Tuesday.

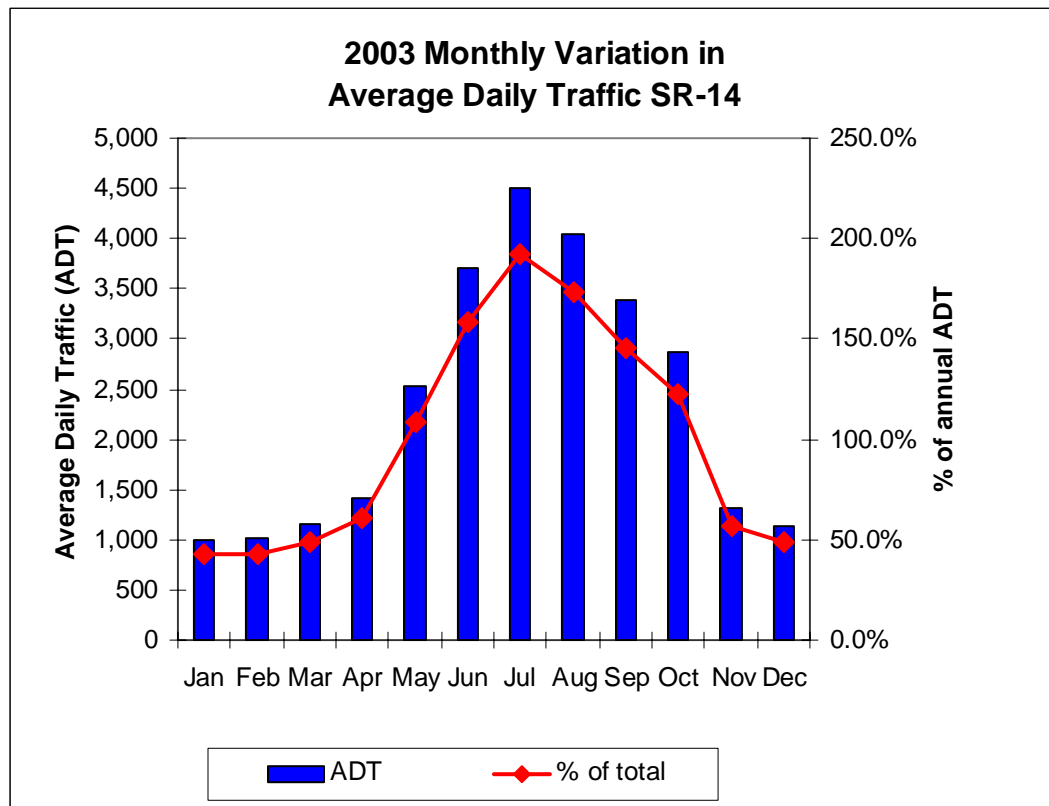


The peak month of July is consistent with a recreational usage. The recreational season appears to be from June thru September.

The hourly traffic shows a clear average peak hour of around 3:00 TO 6:00 pm. This is consistent with an afternoon commuter peak.

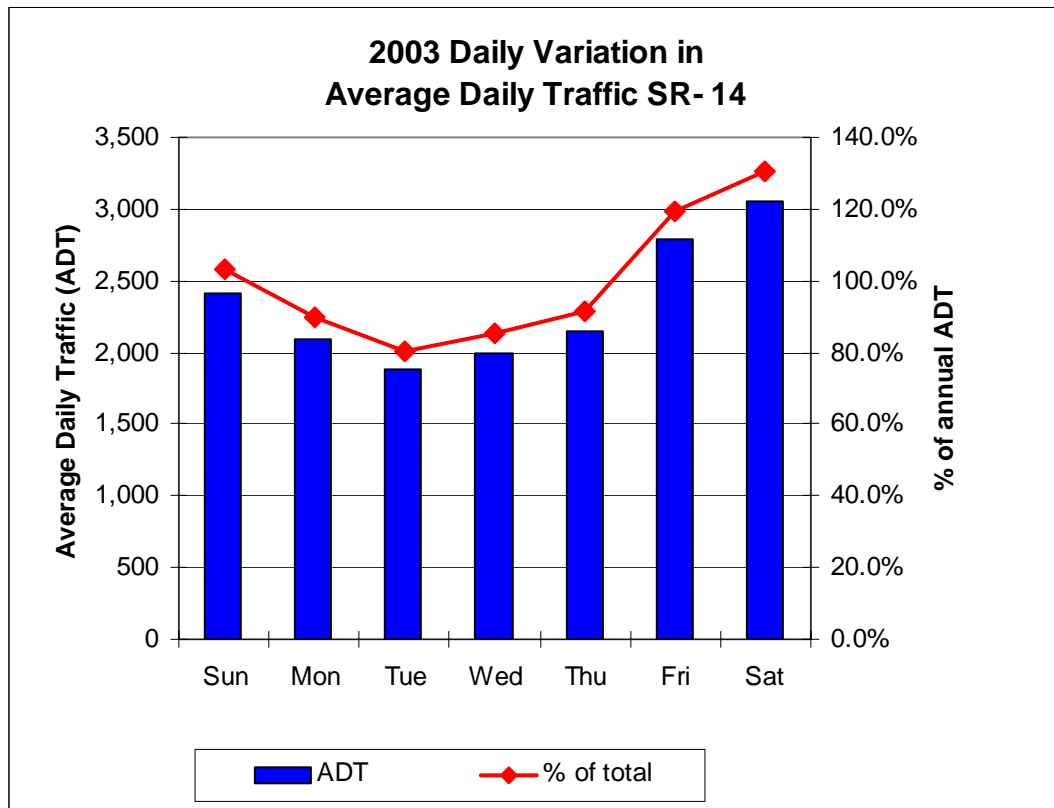
A map illustrating existing and future traffic and roadway capacities is presented in the Traffic Forecast section 3.2.

Figure 10 Monthly ADT on SR-14



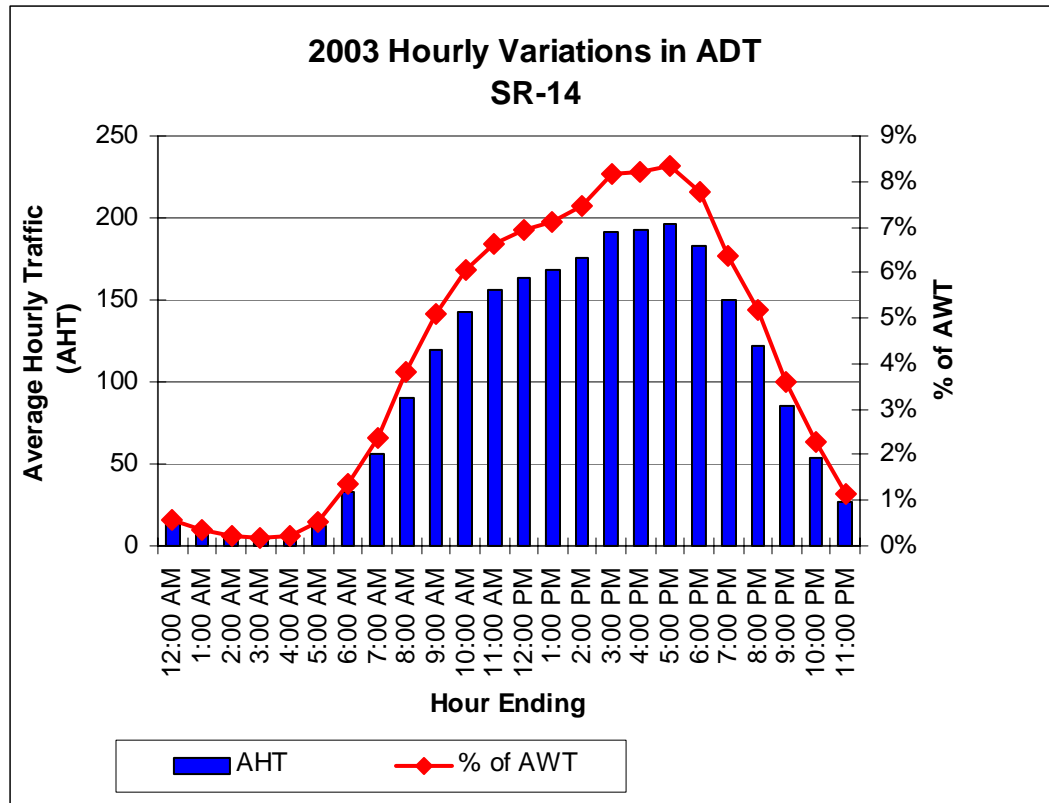
Source: Utah Department of Transportation

Figure 11 Daily ADT on SR-14



Source: Utah Department of Transportation

Figure 12 Hourly Variation on SR-14



Source: Utah Department of Transportation

2.7 Traffic Accidents

Traffic accident data was obtained from UDOT's database of reported accidents from 2002. Table 3 summarizes the accident statistics for those segments for the year 2002. Additional information includes the average daily traffic, the number of reported accidents, and the accident rates. The roadway segment accident rates were determined in terms of accidents per million vehicle miles traveled. The crash rates for each roadway segment are compared to the expected crash rate for similar facilities across the state.

Upon review of the accident data for the state system, there appears to be a higher than expected accident rate on SR-56, SR-130, and SR-14 in the downtown area. The remainder of the state system shows a lower than expected accident rate. Figure 13 shows various segments of the state highway system and associated accident data.

Cedar City may wish to review the accident history for the local street system to identify any specific accident hot spot locations.

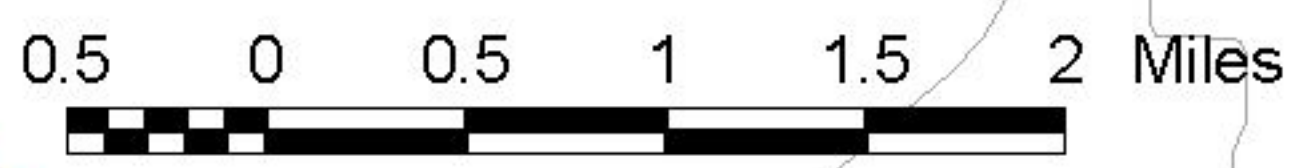
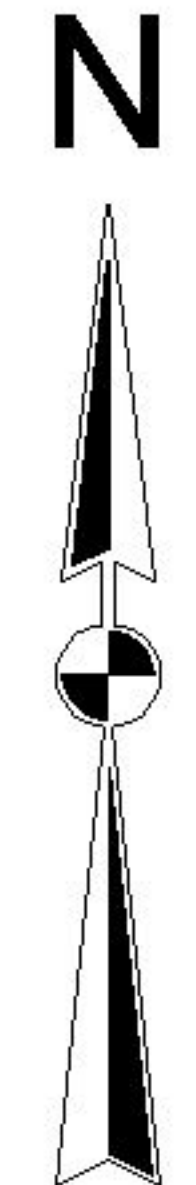
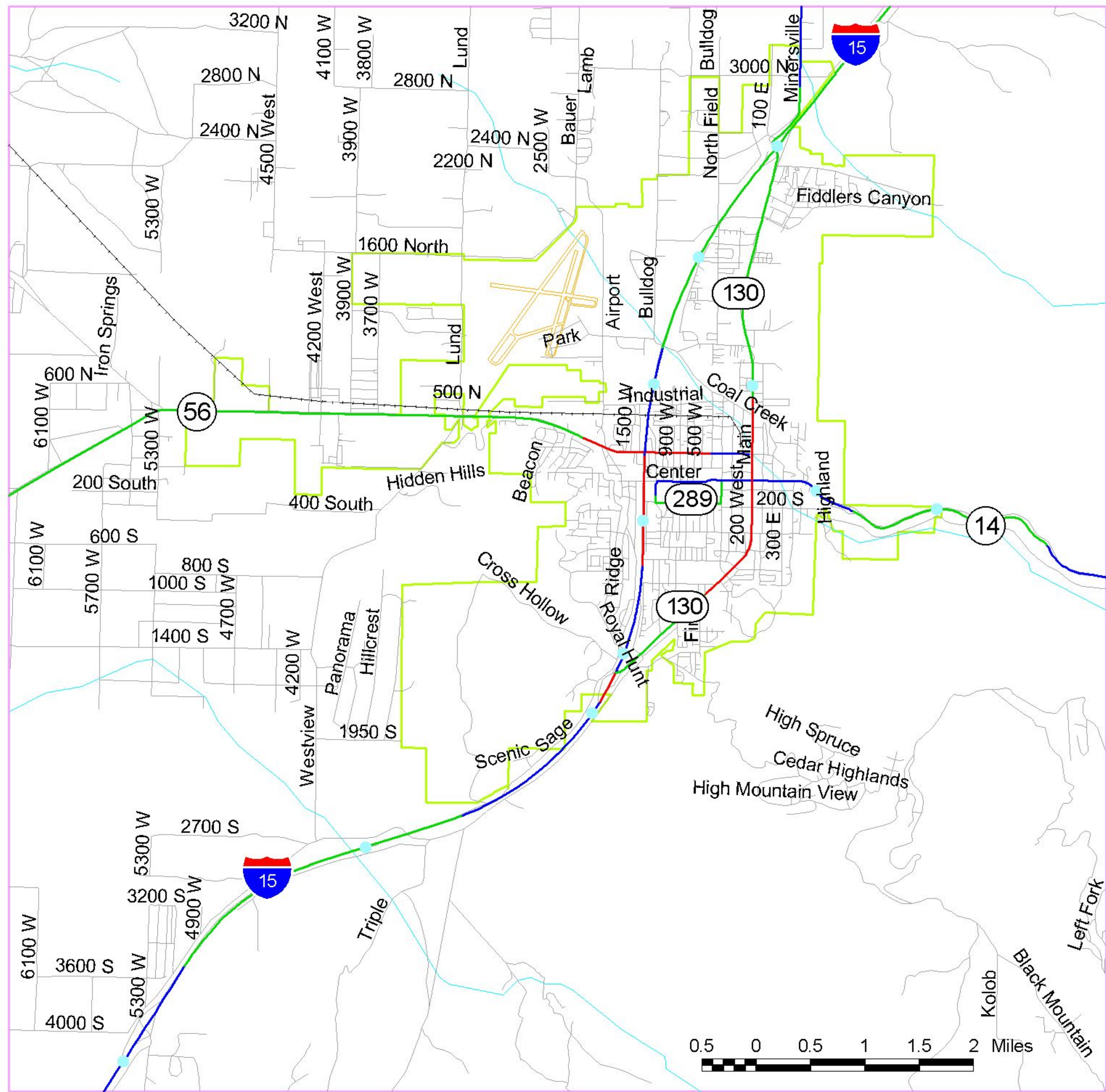
Table 3. Crash Data 2002

Road	From Milepost	End Milepost	ADT (2002)	# Crashes (2002)	Crash Rate	
					Actual	Expected*
SR-14	0	1.6	4,352	8	3.12	2.85
SR-14	1.61	2.86	2,225	0	0.00	4.74
SR-14	2.87	4	1,559	3	4.67	4.74
I-15	49.5	51.22	17,519	7	0.74	1.04
I-15	51.23	56.88	18,769	48	1.42	1.04
I-15	56.89	58.93	20,540	12	1.22	0.97
I-15	58.94	62.01	21,423	30	1.75	0.97
I-15	62.02	65	19,840	10	0.58	0.93
SR-56	54	55.83	2,200	0	0.00	2.40
SR-56	55.84	58.61	3,775	6	1.67	1.88
SR-56	58.62	60.38	5,185	22	7.48	6.47
SR-56	60.39	61.35	10,270	31	5.40	5.16
SR-130	0	0.21	8,555	4	7.89	6.47
SR-130	0.22	1.74	13,340	47	6.83	5.16
SR-130	1.75	2.22	33,350	24	4.51	6.53
SR-130	2.23	2.47	30,520	27	10.84	6.53
SR-130	2.48	2.95	21,145	12	2.88	4.50
SR-130	2.96	5.31	20,570	41	2.50	4.50
SR-130	5.32	5.53	8,840	4	4.58	3.74
SR-130	5.54	8.37	5,780	6	1.34	1.98
SR-130	8.38	9.5	1,280	1	2.03	2.40
SR-289	0	0.66	16,458	13	3.52	6.13
SR-289	0.67	1.29	8,605	12	6.62	2.70
SR-289	1.3	1.67	7,565	2	2.11	2.70
SR-289	1.68	1.88	7,165	4	6.13	4.02

* Statewide average accident rates for functional class and volume group.

Red indicates higher than expected rates of accidents

Figure 13: State Road Crash Rate



2.8 Bicycle and Pedestrian

The Federal Highway Administration recognizes the increasingly important role of bicycling and walking in creating a balanced, intermodal transportation system, and encourages state and local governments to incorporate all necessary provisions to accommodate bicycle and pedestrian traffic. In following this directive, Cedar City is encouraged to adopt a “complete the street” philosophy that allows for the advancement of a transportation system for both motorized and non-motorized travel.



Cedar City appears to support alternative transportation modes and has included this as part of their transportation goals, as noted in the Parks and Recreation Master Plan. These goals when implemented will greatly enhance the quality of life for those residing in, or visiting, Cedar City. The Master Plan references Cedar City’s climate and location among the wonders of Color Country, which makes it ideal for cycling. The Master Plan also details the required planning, design and construction needs to complete a trails system

Cedar City is commonly referred to as the “festival city” due to the amount of scheduled year-round, entertainment. With these scheduled activities comes a significant increase in the amount foot traffic and providing a safe way to circulate throughout the City should be a priority for the community.

2.8.1 Biking/Trails

Cedar City is home to one of Utah’s fastest growing universities – Southern Utah State University. With 6,000 students, in addition to local residents and other visitors, there is a greater need to create a bike/trails system both for transportation and recreation. To partially address this need, the City has constructed the popular Coal Creek Trail, which is a 10’, 3-mile asphalt trail, made possible through the federal-aid Transportation Enhancement program and the Recreational Trails’ funding program.

In addition to the university and the year-round festivities offered in Cedar City, there is also the draw of Brian Head Resort, which is located in close proximity to the City and has previously been selected as one of the top 10 getaways for family travel by *Family Travel Forum*. This nationally recognized resort provides winter sports activities as well as summer sports, such as mountain biking, hiking and ATV riding.

Bicycle and trail issues were addressed at public hearings while developing the City’s Park and Recreation Master Plan. According to results of these hearings, citizens requested that bike trails along higher speed roads have a greater degree of separation to

ensure safety. Trail etiquette was a concern of the community, as was enforcement of off-road vehicle use. Installation of a trails system along the edge of the golf course in order to connect all park facilities was also recommended.

2.8.2 Pedestrian

While many areas within the City are equipped with sidewalk, indications are that some of these locations pose a safety hazard and may be in need of repair. Additionally there are some areas of the City where placement of sidewalk is lacking and should be addressed for safety concerns and connectivity of the transportation system. Through the Enhancement program, Cedar City has had an opportunity to install sidewalk on both sides of SR-130 (Main St.) at the north end of town.

2.9 Public Transportation

Known as “CATS.” CATS operates one route originating at the Rock Church adjacent to City Hall downtown with 26 stops throughout the community. Operating nine trips each weekday and seven trips on Saturdays, CATS serves the downtown business district as well as Southern Utah University, Valley View Medical Center, and both Canyon View and Cedar High. Local public transportation in Cedar City is provided by the Cedar Area Transportation Service Schools. Hours of operation are from 7:00 AM to 6:00 PM Monday through Friday and from 10:00 AM to 6:30 PM on Saturdays. CATS buses can hold up to 14 riders, are climate controlled as well as wheelchair accessible. CATS also provides Dial-A-Ride Para transit service for use by the elderly (age 65 and older) or the disabled. Cedar City is considering a Main Street bus shuttle to assist in reducing local auto traffic in downtown as well as moving visitors who are in town for special events.

Intercity public transportation is very limited in Cedar City. Airline service is provided by Skywest Airlines with twice daily commuter turboprop flights to and from the Skywest/Delta Airlines hub at the Salt Lake City International Airport. Cedar City is interested in attracting additional airline service providing direct flights to Las Vegas and possibly Phoenix. The planned new air terminal at the Cedar City Airport should attract additional interest from the regional airline industry.

Although Greyhound operates twice daily intercity buses through Cedar City on I-15, bus stops are no longer made in either Cedar City or Parowan. As such, intercity bus passengers must drive to St George to access Greyhound’s national bus network. Buses serving St George are operating between Los Angeles, Las Vegas and Salt Lake City with connecting buses to the Midwest and East Coast.

Intercity rail passenger service to southwest Utah was eliminated in May of 1997 with the discontinuance of Amtrak’s Los Angeles to Chicago “Desert Wind” passenger train, which stopped in Milford, about one hour north of Cedar City. The nearest remaining Amtrak passenger train service is provided by the Chicago to San Francisco “California Zephyr” which stops daily in both Salt Lake City and Green River, Utah. Amtrak’s Los Angeles to Chicago “Southwest Chief” makes stops in Barstow, California, as well as Kingman and Flagstaff, Arizona, all of which are a lengthy drive from Cedar City. Roughly six times each year, the deluxe “American Orient Express” excursion train comes into Cedar City via the Union Pacific’s Cedar City branch line. Travel aboard this train is only available to those booking tour packages from AOE and boarding at distant origin points, not in Cedar City. However, the hundreds of high-income tourists brought into Cedar City aboard this train add

additional value to the local economy over and above the freight business provided into Cedar City by the Union Pacific.

2.10 Freight

As the industrial and manufacturing center of southern Utah, freight plays a major role in Cedar City's current economy as well as the city's future land use and transportation planning. Cedar City is located on Interstate Highway 15, which is a key route of the Canamex Corridor linking western Mexico with western Canada via Utah and Nevada. Canamex freight movements were brought about by the North American Free Trade Agreement (NAFTA) Treaty, with the majority of such traffic passing through the Mountain West states. This brings considerable truck traffic through Cedar City on I-15 en route to and from Mexico and Canada via Las Vegas and Salt Lake City. Canamex freight traffic is in addition to existing domestic truck movements via I-15 within the United States.

I-15 is also the western extension of I-70, a major east/west transcontinental truck route, which comes in from the Midwest and East Coast and merges with I-15 at Cove Fort, Utah, 76 miles northeast of Cedar City. Cedar City's location on this four-direction highway freight corridor is vital to the city's efforts to attract additional warehousing and industrial customers to the area.



Cedar City is also the location where two secondary highway freight routes intersect with I-15. State Route 56 comes in from the west where it connects with U.S. Highway 93, another important Canamex Corridor route, in southeastern Nevada. SR 56 also bisects the main industrial and warehousing district on the west side of Cedar City, and as such is the primary freight transportation route in the community.

State Route 130 comes into Cedar City from the north where it connects with SR 21 at Minersville. SR 21 is another secondary north/south highway freight corridor linking I-15 with US 93 via US 50 & US 6 near Great Basin National Park east of Ely, Nevada.

Cedar City is attractive to truck-served industries in view of its central location between Southern California, Phoenix, Salt Lake City and Denver, all of which can be reached within the current 11-hour driver limit imposed by recent changes in the Federal Hours of Service laws governing truck operations.

An additional freight transportation asset available to economic growth in Cedar City is the Union Pacific Railroad's Cedar City Branch. This 1920's-vintage rail line connects

Cedar City with UP's Los Angeles to Chicago Salt Lake Route mainline about 25 miles north of town at Lund. Local rail freight operations serving Cedar City are based out of Milford, which is about 45 miles north of Lund on the UP mainline.

Tuesdays through Saturdays UP's Milford Local goes on duty at the Milford Yard at 8:00 AM, arriving in Cedar City to switch the local industries in the afternoon, returning to Milford that same evening. Freight traveling to or from Cedar City is interchanged with UP mainline trains at the Milford Yard, where all through trains must stop to change operating crews.

Railroad and truck freight service combine to provide a balance of transportation options to businesses currently located in Cedar City. Having railroad freight service available also allows Cedar City to attract industries that would otherwise not consider a truck-service-only location, thus giving the city a distinct advantage over other communities around the West.

Cedar City is considering locating combination rail freight "Team Track" and truck parking and staging facility adjacent to SR 56 and the UP branch line west of the city. This facility would provide truckers with a central location to park while waiting to load or unload at a local industry and it would also provide a location where they could park trailers. Including a team track for loading and unloading of freight for industries lacking their own dedicated rail spur would further enhance such a multi-use freight handling facility.

2.11 Aviation Facilities & Operations

At an elevation of 5623 ft above sea level, the Cedar City Regional Airport is located only two miles northwest of downtown Cedar City just off Airport Road. The airport is equipped with two runways both of which are paved with porous PFC asphalt. The main runway is #2/20, which is 8652 ft in length, 150 ft in width and aligned northeast to southwest. The secondary runway is #8/26, which is 4808 feet long and 60 feet wide.

The airport beacon light is illuminated from dawn to dusk, while runway lights are pilot-controlled during the same period. Although lacking a control tower, Cedar City Regional Airport is equipped with a 24-hour automated Flight Service Station (FSS) operated by the Federal Aviation Administration (FAA). The

airport is also equipped with an ILS (Instrument Landing System) precision approach system, along with a VOR non-directional electronic beacon.



Commercial airline service into Cedar City is provided by Skywest Airlines with twice-daily service to and from their combined hub with Delta Airlines at the Salt Lake City International Airport. Air charter service is provided at Cedar City by Olympus Air, Kolob Canyon Air Service, and Sphere One Aviation. Small parcel air cargo service is operated by both United Parcel Service and Federal Express, with UPS flights operating to and from their regional hub in Salt Lake City, while FedEx operates out of Las Vegas. There are two Fixed Base Operators (FBO) at Cedar City providing aircraft servicing and maintenance, Sphere One Aviation and Cedar Aircraft Maintenance. Also located at Cedar City Regional Airport is an Interagency Air Attack Base operating fire-fighting air tankers and helicopters in support of the U.S. Forest Service, the National Park Service, and the Bureau of Land Management.

Future plans for the Cedar City Regional Airport include a new \$5 million airline passenger terminal scheduled to begin construction in August of 2004, with completion targeted for August 2005. Cedar City hopes to attract an airline or airlines interested in providing service between Cedar City and Las Vegas and Phoenix. Cedar City is also interested in extending main runway #2/20 at the north end to a total length of 10,000 ft. This runway extension will allow a high altitude airport such as Cedar City to operate the full range of corporate business jet aircraft, as well as jet airliners, with a full fuel, passenger, or cargo load without being impacted by “density altitude,” i.e., loss-of-lift issues on hot summer days.

2.12 Revenue

Maintenance of existing transportation facilities and construction of new facilities come primarily from revenue sources that include the Cedar City general fund, federal funds and State Class C funds.

Financing for local transportation projects consists of a combination of federal, state, and local revenues. However, this total is not entirely available for transportation improvement projects, since annual operating and maintenance costs must be deducted from the total revenue. In addition, the City is limited in their ability to subsidize the transportation budget from general fund revenues.

2.12.1 State Class B and C Program

The distribution of Class B and C Program monies is established by state legislation and is administered by the State Department of Transportation. Revenues for the program are derived from State fuel taxes, registration fees, driver license fees, inspection fees, and transportation permits. Twenty-five percent of the funds derived from the taxes and fees are distributed to cities and counties for construction and maintenance programs.

Class B and C funds are allocated to each city and county by the following formula: 50% based on the population ratio of the local jurisdiction with the population of the State, 50% based on the ratio that the Class B roads weighted mileage within each county and the class C roads weighted mileage within each municipality bear to the total class B and Class C roads weighted mileage within the state. Weighted means the sum of the following: (i) paved roads multiplied by five; (ii) graveled road miles multiplied by two;

and (iii) all other road types multiplied by one. (Utah Code 72-2-108) For more information go to UDOT's homepage @ www.udot.utah.gov, tab on "Doing Business" select the tab for "Local Government Assistance" here you will find the Regulations governing Class B&C funds.

The table below identifies the ratio used to determine the amount of B and C funds allocated.

Apportionment Method of Class B and C Funds

Based on	Of
50%	Roadway Mileage *Based on Surface Type Classification(Weighted Measure) Pave Road (X 5) Graveled Road (X 2) Other Road (X 1)
50%	Total Population

Class B and C funds can be used for maintenance and construction of highways, however thirty percent of the funds must be used for construction or maintenance projects that exceed \$40,000. Class B and C funds can also be used for matching federal funds or to pay the principal, interest, premiums, and reserves for issued bonds.

Cedar City received \$830,761.47 in 2003 for its Class C fund allocation.

2.12.2 Federal Funds

There are federal monies that are available to cities and counties through the federal-aid program. The funds are administered by the Utah Department of Transportation. In order to be eligible, a project must be listed on the five-year Statewide Transportation Improvement Program (STIP).

The Surface Transportation Program (STP) provides funding for any road that is functionally classified as a collector street or higher. STP funds can be used for a range of projects including rehabilitation and new construction. The Joint Highway Committee programs a portion of the STP funds for projects around the State for rural areas. A portion of the STP funds can be used in any area of the State, at the discretion of the State Transportation Commission.

Transportation Enhancement funds are allocated based on a competitive application process. The Transportation Enhancement Advisory Committee reviews the applications and then a portion of those are recommended to the State Transportation Commission for funding. Transportation enhancements include 12 categories ranging from historic preservation, bicycle and pedestrian facilities to water runoff mitigation. Other funds that are available are State Trails Funds, administered by the Division of Wildlife Resources.

The amount of money available for projects specifically in the study area varies each year depending on the planned projects in UDOT's Region Four. As a result, federal aid program monies are not listed as part of the study area's transportation revenue.

2.12.3 Local Funds

Cedar City, like most cities, has utilized general fund revenues in its transportation program. Other options available to improve the City's transportation facilities could involve some type of bonding arrangement, either through the creation of a redevelopment district or a special improvement district. These districts are organized for the purpose of funding a single, specific project that benefits and identifiable group of properties. Another source is through general obligation bonding arrangements for projects felt to be beneficial to the entire entity issuing the bonds.

2.12.4 Private Sources

Private interests often provide alternative funding for transportation improvements. Developers construct the local streets within the subdivisions and often dedicate right-of-way and participate in the construction of collector or arterial streets adjacent to their developments. Developers can be considered as an alternative source of funds for projects because of the impacts of the development, such as the need for traffic signals or street widening. Developers should be expected to mitigate certain impacts resulting from their developments. The need for improvements, such as traffic signals or street widening can be mitigated through direct construction or impact fees.

3. Future Conditions

3.1. Land Use and Growth

Cedar City's Transportation Master Plan must be responsive to current and future needs of the area. The area's growth must be estimated and incorporated into the evaluation and analysis of future transportation needs. This is done by:

- Forecasting future population, employment, and land use;
- Projecting traffic demand;
- Forecasting roadway travel volumes;
- Evaluating transportation system impacts;
- Documenting transportation system needs; and
- Identifying improvements to meet those needs.



This chapter summarizes the population, employment, and land use projections developed for the project study area. Future traffic volumes for the major roadway segments are based on projections utilizing 20 years of traffic count history. The forecasted traffic data are then used to identify future deficiencies in the transportation system.

3.1.1 Population and Employment Forecasts

The Governor's Office of Planning and Budget develop population and employment projections. The current population and employment levels, as well as the future projections for each are shown for Cedar and Iron County in the following table. This growth equates to about a 2% annual increase in population.

Population and Employment

Year	City	County	
	Population	Population	Employment
2000	20,527	33,779	14,484
2030	32,564	60,191	32,293

3.1.2 Future Land Use

The City's General Plan includes an annexation declaration that describes where it intends to grow. Some of these areas for developments were discussed during the course of the Transportation Master Plan:

1. State Trust Land located east of SR-130 north of town.
2. Industrial Park located west of I-15.
3. Development along Cross Hollow Road both residential and commercial.
4. Expansion to the Airport with a new terminal, new route into the facility and upgrades to the current runway.

While specific development plans change with time, it is important to note possible areas of development within the Cedar area. Commercial and industrial growth is also important in understanding transportation needs.

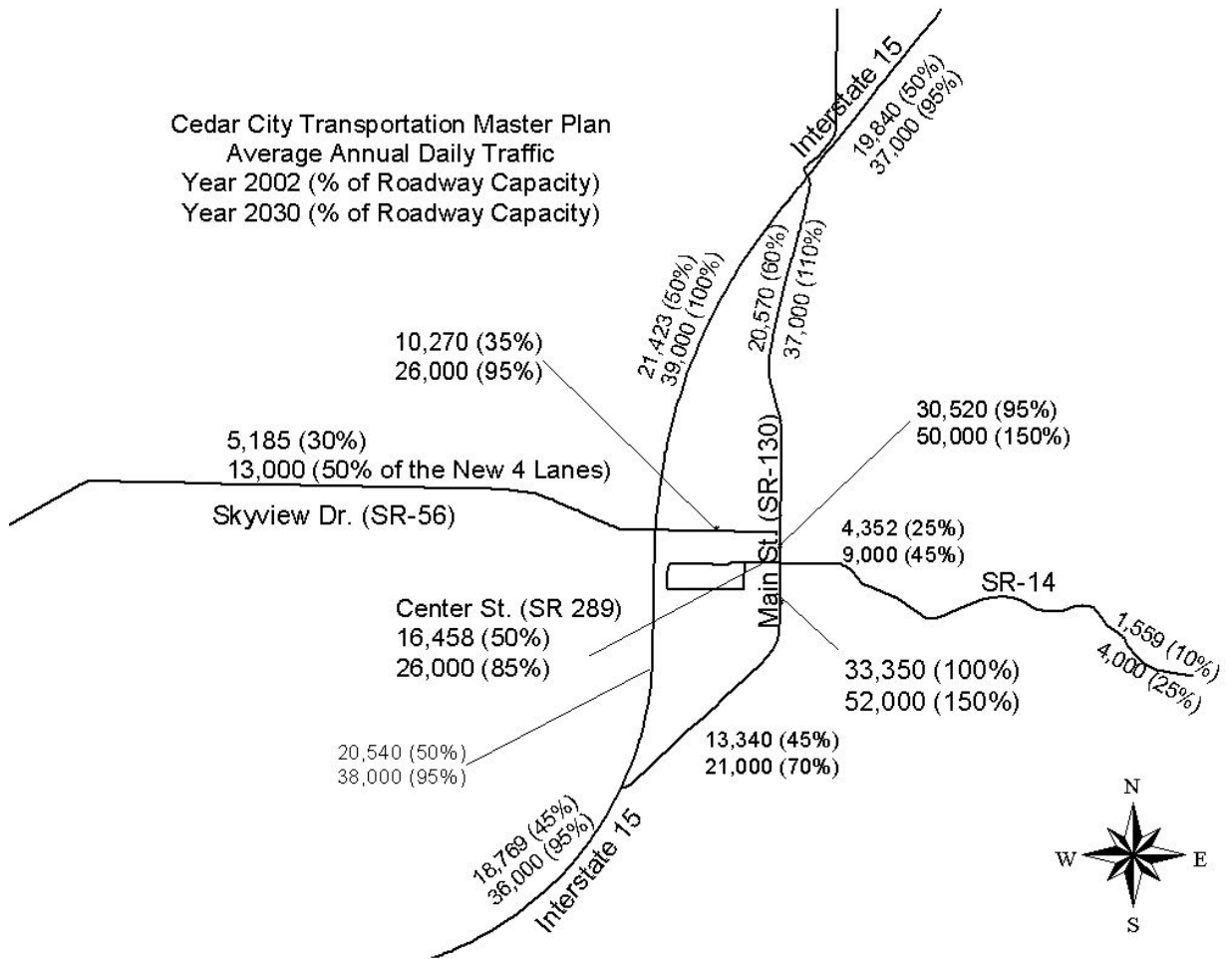
3.2 Traffic Forecast

As shown in the previous section, the population of Cedar City should average about 2% increase per year. Traffic in the Cedar area will grow slightly more than the population at about 3% per year. The map on the following page shows average annual daily traffic for years 2002 and 2030. Some roadway corridors such as 200 North (SR-56) west of I-15 and SR-130 south of I-15 will experience higher growth due to the surrounding area's potential for growth.



I-15 through Cedar City will be near capacity in 2030, however, the corridor with the heaviest congestion in the area is downtown Main Street (SR-130). Today, Main Street is operating at its maximum capacity. By the year 2030, this roadway will have demand for 50% more traffic than it is capable of servicing. Widening Main Street to 6 lanes may not be a feasible alternative. Other capacity improvements should be examined such as limiting access, adding additional turning lanes, improving signal coordination, or perhaps improving parallel facilities.

Cedar City Transportation Master Plan
Average Annual Daily Traffic
Year 2002 (% of Roadway Capacity)
Year 2030 (% of Roadway Capacity)



4 Transportation Improvement Projects

4.1 Current Statewide Transportation Improvement Program (STIP)

At the present time there are several projects under consideration and investigation in the Cedar City area. Currently in the STIP are the following projects:

- SR-56 from I-15 to Iron Springs to Four lanes
- Cross Hollow Road; I-15 to SR-56
- A Level 3 Analysis study currently underway for SR –148 and SR-14 between Cedar City and Long Valley Junction.

4.2 Recommended Projects

The following projects have been identified as having a high priority to the Cedar City Transportation Advisory Committee. These needs were identified through meetings where the TAC discussed needs and set priorities for projects.

- Widen Cross Hollow Road
- New reconfigured I-15 South Interchange
- Develop a comprehensive Trails Plan
- Aviation Way New Construction
- Widen and Improve Coal Creek Road
- New Traffic Signal at 1325 North and Main Street (SR-130)
- 2400 North/ 5300 West Loop Road, New Construction

The TAC identified other concerns and issues, which are listed on the following page. As priorities or needs change the list will need to be updated.

The Cedar City General Plan also contains a street Master Plan that also identifies many transportation issues and needs of the community. This TMP should be used as a companion to the City's present document.

Transportation Needs and Cost Estimates

Location			Length or Quantity	Project Unit Cost	Total Cost
New Roads	From	To			
New I-15 South Interchange			1	\$18,000,000	\$18,000,000
Cross Hollow Rd	1/2 mil so of SR-56	South Interchange	2.5	\$240,000	\$600,000
5700 West Corridor (EIS on going) County has cost estimate	SR-56	Kannaraville Interchange	5.5	\$1,450,000	\$7,975,000
Aviation Way	SR-56 (abt 2800 W)	Airport	0.6	\$1,500,000	\$900,000
4500 West Corridor	I-15 No of Kannaraville	Summit Interchange	20	\$2,500,000	\$50,000,000
2400 North / 5300 West Loop Road	I-15 No Interchange	SR-56	8	\$2,000,000	\$16,000,000
I-15 Interchange at Midvalley Road (Enoch)			1	\$15,000,000	\$15,000,000
Roadway Improvements					
Cross Hollow Road (Widen)	SR-56	1/2 mi south	0.5	\$800,000	\$400,000
Coal Creek Road (Widen / Improve) City has estimate	Main St	Airport Road	2	\$1,000,000	\$2,000,000
Access Road to State Trust Lands No of Town	SR-130 (1600 No)	East of SR-130	0.5	\$800,000	\$400,000
SR-56 to SR-14 Secondary Route (Alt 1)	300 West	Center Street	1	\$1,000,000	\$1,000,000
SR-56 to SR-14 Secondary Route (Alt 2)	200 East	Center Street	1	\$1,000,000	\$1,000,000
SR-14 (Widen / Shoulders)	City limits	2 miles east	2	\$1,500,000	\$3,000,000
Lund Highway (Widen Shoulders to City Limits & 3" Overlay to Lund)	Cedar City	Lund	20	\$400,000	\$8,000,000
Safety Projects					
Center Street & 500 West (Ped Flashers)			1	\$30,000	\$30,000
500 West & 200 South (Ped Flashers)			1	\$30,000	\$30,000
New Traffic Signal					
SR-130 (Main) & 400 south			1	\$150,000	\$150,000
SR-130 (Main) & 1325 North (Hospital)			1	\$150,000	\$150,000
SR-130 (Main) & 1600 North			1	\$150,000	\$150,000
SR-56 & Lund Road			1	\$150,000	\$150,000
Cross Hollow Road & SR-56			1	\$150,000	\$150,000
SR-56 & Beacon Rd.			1	\$150,000	\$150,000
SR-130 (Main) & Automall Drive			1	\$150,000	\$150,000
SR-130 (Main) & Nichol Cyn Road			1	\$150,000	\$150,000
SR-130 (Main) & 1045 North			1	\$150,000	\$150,000
1150 West & Center			1	\$150,000	\$150,000
Studies					
SR-130 Main Street (Downtown traffic / access study)	Downtown Main Street		1	\$200,000	\$200,000
Roundabout Feasibility Review (200 North & Main Street also Center & Main)			1	\$50,000	\$50,000
Alternative Travel Modes					
Continue Coal Creek Trail Systsem (I-15 to Existing at 275 North)			2	\$130,000	\$260,000
Continue Coal Creek Trail Systsem (Existing to Forest Boundary)			12	\$130,000	\$1,560,000
Trail Master Plan Update (Ped, Motorized, livestock, Bike, ATV)			1	\$50,000	\$50,000
Transit Study (Enhanced Main Street Transit Service)			1	\$100,000	\$100,000
Freight					
Relocate Rail Switch from downtown to SR-56 area			1	\$500,000	\$500,000
Truck unloading area west of town (600'X600' Paved Parking Lot)			1	\$600,000	\$600,000
Drainage					
City Master Drainage Plan			1	\$200,000	\$200,000
Storm Drain 300 West: Main to Coal Creek*	City's estimate		1	\$2,000,000	\$2,000,000
Coal Creek Parkway Project*	City's estimate		1	\$6,000,000	\$6,000,000
				Total Needs Costs	\$137,355,000

4.3 Revenue Summary

4.3.1 Federal and State Participation

Federal and State participation is important for the success of implementing these projects. UDOT needs to see the Transportation Master Plan so that they understand what the City wants to do with its transportation system. UDOT can then weigh the priorities of the city against the rest of the state. It is important for Cedar City to promote projects that can be placed on UDOT's five-year Statewide Transportation Improvement Program (STIP) as soon as possible. Coordination with UDOT's District Engineer, Planning Engineer and Region Director will be practical.

4.3.2 City Participation

The City will fund the local Cedar City projects. The local match component and partnering opportunities vary by the funding source.

4.4 Other Potential Funding

Previous sections of this chapter show significant shortfalls projected for the short-range and long-range programs. The following options may be available to help offset all or part of the anticipated shortfalls:

- Increased transportation impact fees.
- Increased general fund allocation to transportation projects.
- General obligation bonds repaid with property tax levies.
- Increased participation by developers, including cooperative programs and incentives.
- Special improvement districts (SIDs), whereby adjacent property owners are assessed portions of the project cost.
- Sales or other tax increase.
- State funding for improvements on the county roadway system.
- Increased gas tax, which would have to be approved by the State Legislature.
- Federal-aid available under one of the programs provided in the federal transportation bill (TEA-21 is the current bill; SAFETEA will likely be passed in late 2004).

Increased general fund allocation means that General Funds must be diverted from other governmental services and/or programs. General obligation bonds provide initial capital for transportation improvement projects but add to the debt service of the governmental agency. One way to avoid increased taxes needed to retire the debt is to sell bonds repaid with a portion of the municipalities' State Class monies for a certain number of years.

Participation by private developers provides a promising funding mechanism for new projects. Developers can contribute to transportation projects by constructing on-site improvements along their site frontage and by paying development fees. Municipalities commonly require developers to dedicate right-of-way and widen streets along the site frontage. A negative side of the on-site improvements is that the streets are improved in pieces. If there are not several developers adjacent to one another at the same time, a

continuous improved road is not provided. One way to overcome this problem is for the jurisdiction to construct the street and charge the developers their share when they develop their property.

Another way developers can participate is through development fees. The fees would be based on the additional improvements required to accommodate the new development and would be proportioned among each development. The expenditure of additional funds provided by the fees would be subject to the City's spending limit. However, development fees are often a controversial issue and may or may not be an appropriate method of funding projects.

5 Planning Issues and Guidelines

Provided below is a discussion of various issues with a focus on elements that promote a safe and efficient transportation system in the future.

5.1 Guidelines and Policies

These guidelines address certain areas of concern that are applicable to Cedar City's Transportation Master Plan.

5.1.1 Access Management

This section will define and describe some of the aspects of Access Management for

roadways and why it is so important. Access Management can make many of the roads in a system work better and operate more safely if properly implemented. There are many benefits to properly implemented access management. Some of the benefits follow:

- Reduction in traffic conflicts and accidents
- Reduced traffic congestion
- Preservation of traffic capacity and level of service
- Improved economic benefits businesses and service agencies
- Potential reductions in air pollution from vehicle exhausts

5.1.1.1 Definition

Access management is the process of comprehensive application of traffic engineering techniques in a manner that seeks to optimize highway system performance in terms of safety, capacity, and speed. Access Management is one tool of many that makes a traffic system work better with what is available.

5.1.1.2 Access Management Techniques

There are many techniques that can be used in access management. The most common techniques are signal spacing, street spacing, access spacing, and interchange to crossroad access spacing. There are various distances for each spacing, dependant upon the roadway type being accessed and the accessing roadway. UDOT has developed an access management program and more information can be gathered from the UDOT website and from the Access Management Program Coordinator.



5.1.1.3 Where to Use Access Management

Access Management can be used on any roadway. In some cases, such as State Highways, access management is a requirement. Access management can be used as an inexpensive way to improve performance on a major roadway that is increasing in volume. Access management should be used on new roadways and roadways that are to be improved so as to prolong the usefulness of the roadway.

5.1.1 Context Sensitive Solutions

Context Sensitive Solutions (CSS) addresses the need, purpose, safety and service of a transportation project, as well as the protection of scenic, aesthetic, historic, environmental and other community values. CSS is an approach to transportation solutions that find, recognize and incorporate issues/factors that are part of the larger context such as the physical, social, economic, political and cultural impacts. When this approach is used in a project the project become better for all of the entities involved.

5.1.2 Recommended Roadway Cross Sections

The Cedar City General Plan of 1994 has a section dedicated to the transportation in the area. The section gives the classification of many of the streets in Cedar City along with the right-of-way widths needed. Many projects are also listed in this section along with descriptions. This is will help in the future for protecting and acquiring right-of-way for the needed transportation improvements.

The section does not outline details of roadway cross-sections. The following paragraphs provide additional discussion on cross-sections.

Cross sections are the combination of the individual design elements that constitute the design of the roadway. Cross section elements include the pavement surface for driving and parking lanes, curb and gutter, sidewalks and additional buffer/landscape areas. Right-of-way is the total land area needed to provide for the cross section elements.

The design of the individual roadway elements depends on the intended use of the facility. Roads with higher design volumes and speeds need more travel lanes and wider right-of-way than low volume, low speed roads. The high use roadway type should include wider shoulders and medians, separate turn lanes, dedicated bicycle lanes, elimination of on street parking, and control of driveway access. For most roadways, an additional buffer area is provided beyond the curb line. This buffer area accommodates the sidewalk area, landscaping, and local utilities. Locating the utilities outside the traveled way minimizes traffic disruption in utility repairs or changes in service are needed.

Federal Highway standard widths apply on the all roads that are part of the state highway system. Also, all federally funded roadways in Cedar City and Iron County must adhere to the same standards for widths and design.

5.2 Bicycles and Pedestrians

5.2.1 Bicycles/Trails

Bicycles are allowed on all roadways, except where legally prohibited, and as such should be a consideration on all roads that are being designed and constructed, and as roadway improvements are taking place. Due to the high level of interest in bicycling in the Cedar City area, the City should encourage developers to include separate bicycle/pedestrian pathways in all new developments. Opportunities to include bike lanes and increased shoulder width in conjunction with a roadway project should be taken whenever technically, environmentally, and financially feasible.



As noted in section 2.8 of this Plan, results of public hearings held during development of the Cedar City Park and Recreation Master Plan identified the following community concerns or requests:

- There is a desire to construct separate bike paths at locations in the City where traffic flows at higher speeds.
 - This request should be reviewed and applied as practical for the City.
- Enforcement of off-road vehicle use.
 - Enlisting assistance from law enforcement personnel could support this recommendation.
- The need for trail etiquette.
 - This could be remedied by educating the trails users. Installing appropriate signage could also be used to inform those using the trails.
- Constructing a trails system along the edge of the golf course to connect all park facilities.
 - The City may want to consider this request as the trails system is developed.

Cedar City's Park and Recreation Master Plan identifies two types of trails facilities. One serves recreational traffic only, and the other serves both recreational and transportation traffic. It is important to note that regardless of the system's function, as the bike/trail facilities are planned, designed and constructed, the City should review the connectivity of the trails systems and needs within the area. With input from the community, a review of the connectivity of the trails systems should play an integral role in the decision making process for potential projects. In order to provide for a better quality of life for

those in the community, the trails should be accessible to all users and incorporate ADA requirements.

The trails, when constructed, may have slight variances in application type due to possible differences in the terrain at a specific trail location or differing user needs. However, regardless of the design type, the applicable design standards found in the latest version of the AASHTO Guide for the Development of Bicycle Facilities should be followed, as well as the Manual on Uniform Traffic Control Devices (MUTCD) guidelines for appropriate signage of the trails system.

5.2.2 Pedestrians

Every effort should be made to accommodate pedestrians throughout Cedar City. An opportunity to include accessible sidewalks, while adhering to ADA requirements, during construction of other projects is encouraged. For the safety and convenience of pedestrian traffic, sidewalk placement should be free from debris and obstructions or impediments such as utility poles, trees, bushes, etc. Developers should be encouraged to include sidewalk placement or improvements in their respective project development plans. The City has a current inventory of the conditions of all sidewalks throughout the City. Annually, as funds allow, repairs are made to the sidewalks to bring them to an acceptable standard by grinding, trimming and/or replacement of defective sidewalk sections. Also City Staff and a City Committee called the Disability Action Team have completed surveys to assess the condition of all ADA access ramps and locations where such ramps are needed. Actions are also being taken to install or improve ADA access ramps as funds allow.

Sidewalks in residential areas should be at least 5-feet wide whenever adequate right-of-way can be secured. This will provide sufficient room and a level of comfort to persons walking in pairs or passing and will specifically allow for persons with strollers or in wheelchairs to pass. On major roadways, sidewalks at least 6-feet wide and with a 6 to 10-foot park strip are desirable. In pedestrian-focused areas, such as schools, parks, sports venues or theaters, and in hotel and market districts, even wider sidewalks are recommended to accommodate and encourage a higher level of pedestrian activity, especially where tourist use would be expected. To ensure consistency of sidewalks throughout the area, UDOT's approved standard for sidewalks should be followed.

There may be opportunity for Cedar City to make improvements to their sidewalk system through the Utah Department of Transportation's Safe Sidewalk Program, available through the Traffic and Safety Division. The City should contact UDOT's Cedar City District and/or Region 4 office for application requirements.

The City should be aware of, and coordinate with, the area schools that are tasked with developing a routing plan to provide a safe route to school. The routing plan is to be reviewed and updated annually. Information regarding the Safe Routes to School program is available by contacting the Utah Department of Transportation's Traffic and Safety Division.

5.3. Enhancements Program

In 1991, the Intermodal Surface Transportation Efficiency Act (ISTEA) created the Transportation Enhancement program. The program has since been reauthorized in subsequent bills (i.e. TEA-21). The Transportation Enhancement program provides opportunities to use federal dollars to enhance the cultural and environmental value of the transportation system. These transportation enhancements are defined as follows by TEA-21:

The term ‘transportation enhancement activities’ means, with respect to any project or the area to be served by the project, any of the following activities if such activity relates to surface transportation: provision of facilities for pedestrians and bicycles, provision of safety and educational activities for pedestrians and bicyclists, acquisition of scenic easements and scenic or historic sites, scenic or historic highway programs (including the provision of tourist and welcome center facilities), landscaping and other scenic beautification, historic preservation, rehabilitation and operation of historic transportation buildings, structures, or facilities (including historic railroad facilities and canals), preservation of abandoned railway corridors (including the conservation and use thereof for pedestrian or bicycle trails), control and removal of outdoor advertising, archeological planning and research, environmental mitigation to address water pollution due to highway runoff or reduce vehicle caused wildlife mortality while maintaining habitat connectivity, and establishment of transportation museums.

The Utah Transportation Commission, with the help of an advisory committee, decides which projects will be programmed and placed on the Statewide Transportation Improvement Program (STIP). Applications are accepted in an annual cycle for the limited funds available to UDOT for such projects. Applications for the current cycle are due in January, 2005.

5.4. Transportation Corridor Preservation

Transportation Corridor Preservation will be introduced as a method of helping Cedar City’s Transportation Master Plan. This section will define what Corridor Preservation is and ways to use it to help the Transportation Master Plan succeed for the City.

5.4.1. Definition

Transportation Corridor Preservation is the reserving of land for use in building roadways that will function now and can be expanded at a later date. It is a planning tool that will reduce future hardships on the public and the city. The land along the corridor is protected for building the roadway and



maintaining the right-of-way for future expansion by a variety of methods, some of which will be discussed here.

5.4.2. Corridor Preservation Techniques

There are three main ways that a transportation corridor can be preserved. The three ways are acquisition, police powers, and voluntary agreements and government inducements. Under each of these are many sub-categories. The main methods will be discussed here, with a listing of some of the sub-categories.

5.4.2.1 Acquisition

One way to preserve a transportation corridor is to acquire the property outright. The property acquired can be developed or undeveloped. When the city is able to acquire undeveloped property, the city has the ability to build without greatly impacting the public. On the other hand, acquiring developed land can be very expensive and can create a negative image for the City. Acquisition of land should be the last resort in any of the cases for Transportation Corridor Preservation. The following is a list of some ways that land can be acquired.

- Development Easements
- Public Land Exchanges
- Private Land Trusts
- Advance Purchase and Eminent Domain
- Hardship Acquisition
- Purchase Options

5.4.2.1. Exercise of Police Powers

Police powers are those ordinances that are enacted by a municipality in order to control some of the aspects of the community. There are ordinances that can be helpful in preserving corridors for the Transportation Master Plan. Many of the ordinances that can be used for corridor preservation are for future developments in the community. These can be controversial, but can be initially less intrusive.

- Impact Fees and Exactions
- Setback Ordinances
- Official Maps or Maps of Reservation
- Adequate Public Facilities and Concurrency Requirements

5.4.2.2. Voluntary Agreements and Governmental Inducements

Voluntary agreements and governmental inducements rely on the good will of both the developers and the municipality. Many times it is a give and take situation where both parties could benefit in the end. The developer will likely have a better-developed area and the municipality will be able to preserve the corridor for transportation in and around the development. Listed below are some of the

voluntary agreements and governmental inducements that can be used in order to preserve transportation corridors in the city limits.

- Voluntary Platting
- Transfer of Development Rights
- Tax Abatement
- Agricultural Zoning

Each of these methods has its place, but there is an order that any government should try to use. Voluntary agreements and government inducements should be used, if possible, before any police powers are used. Police powers should be tried before acquisition is sought. UDOT has developed a toolkit to aid in corridor preservation techniques. This toolkit contains references to Utah code and examples of how the techniques have been used in the past.